

=> file reg

FILE 'REGISTRY' ENTERED AT 11:49:15 ON 07 NOV 2002
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=> d his

FILE 'LREGISTRY' ENTERED AT 09:51:24 ON 07 NOV 2002

E NORBORNENE/CN

L1 1 S E3
L2 STR 498-66-8
L3 STR
L4 STR
L5 STR L4
L6 STR

FILE 'REGISTRY' ENTERED AT 10:06:01 ON 07 NOV 2002

L7 SCR 2043
L8 0 S L2 AND L3 AND L5 AND L6 AND L7

FILE 'LREGISTRY' ENTERED AT 10:07:02 ON 07 NOV 2002

ACT THO199/A

L9 SCR 2043
L10 STR
L11 QUE L10 AND L9

FILE 'REGISTRY' ENTERED AT 10:07:39 ON 07 NOV 2002

ACT THO199/A

L12 SCR 2043
L13 STR
L14 26050 SEA FILE=REGISTRY SSS FUL L13 AND L12

L15 0 S L2 AND L3 AND L5 AND L6 SSS SAM SUB=L14
L16 STR L2
L17 0 S L16 AND L3 AND L5 AND L6 SSS SAM SUB=L14

FILE 'LREGISTRY' ENTERED AT 10:14:53 ON 07 NOV 2002

L18 STR

FILE 'REGISTRY' ENTERED AT 10:23:31 ON 07 NOV 2002

L19 36 S L16 AND L18 SSS SAM SUB=L14
L20 768 S L16 AND L18 SSS FUL SUB=L14
SAV L20 CLA313/A
L21 0 S L16 AND L3 SSS SAM SUB=L14
L22 0 S L16 AND L3 SSS FUL SUB=L14
L23 1 S L16 AND L18 AND L5 AND L6 SSS SAM SUB=L14

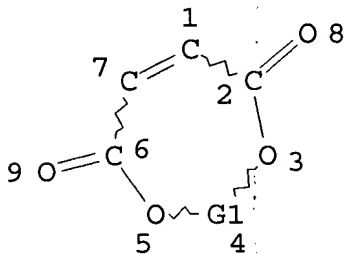
L24 81 S L16 AND L18 AND L5 AND L6 SSS FUL SUB=L14
SAV L24 CLA313A/A

FILE 'HCA' ENTERED AT 11:31:08 ON 07 NOV 2002

L25 133557 S PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR MASK
L26 481 S L20
L27 46 S L24
L28 4 S L27 AND L25
L29 75 S L26 AND L25
L30 24845 S ACID? (2A) (LABIL? OR FRAGMENT? OR CLEAV? OR DISPROPORTIO
L31 4 S L29 AND L30
L32 7 S L28 OR L31
L33 68 S L29 NOT L32
L34 18 S L33 AND 1907-1999/PY
L35 16 S L34 AND P/DT

FILE 'REGISTRY' ENTERED AT 11:49:15 ON 07 NOV 2002

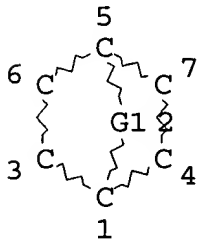
=> d l22 que stat
L3 STR



REP G1=(1-10) A
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L12 SCR 2043
L13 STR

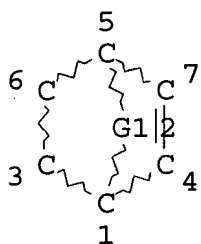


C~C
@11 @12

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 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
 L14 26050 SEA FILE=REGISTRY SSS FUL L13 AND L12
 L16 STR



C~C
 @11 @12

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 DEFAULT ECLEVEL IS LIMITED

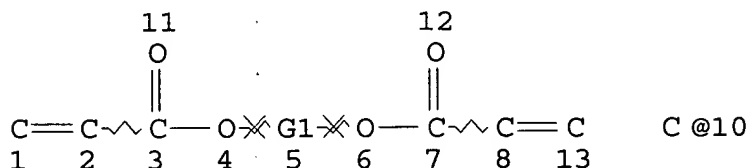
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 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
 L22 0 SEA FILE=REGISTRY SUB=L14 SSS FUL L16 AND L3

100.0% PROCESSED 1794 ITERATIONS
 SEARCH TIME: 00.00.03

0 ANSWERS

=> d l24 que stat
 L5 STR



REP G1=(1-10) 10
 NODE ATTRIBUTES:
 NSPEC IS RC AT 10
 DEFAULT MLEVEL IS ATOM

↓
 This means no bits
 for case where
 b ≠ 0.

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L6 STR

C=C~COOH

1 2 3

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

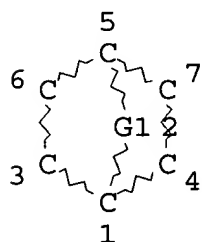
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L12 SCR 2043

L13 STR



VAR G1=C/11-5 12-1/O/S

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

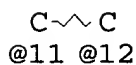
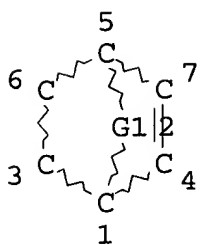
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NUMBER OF NODES IS 9

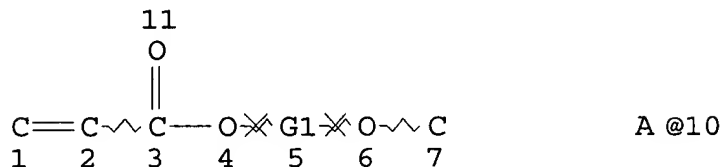
STEREO ATTRIBUTES: NONE

L14 26050 SEA FILE=REGISTRY SSS FUL L13 AND L12

L16 STR



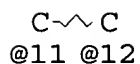
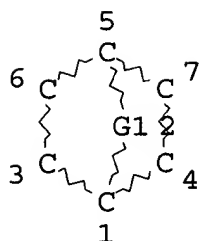
STEREO ATTRIBUTES: NONE
L18 STR



```
STEREO ATTRIBUTES: NONE
L24          81 SEA FILE=REGISTRY SUB=L14 SSS FUL L16 AND L18 AND L5 AND
              L6
```

81 ANSWERS

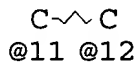
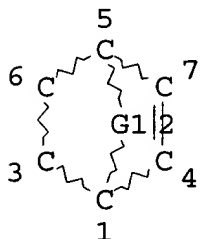
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=> d 120 que stat
L12          SCR 2043
L13          STR
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```
VAR G1=C/11-5 12-1/O/S
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

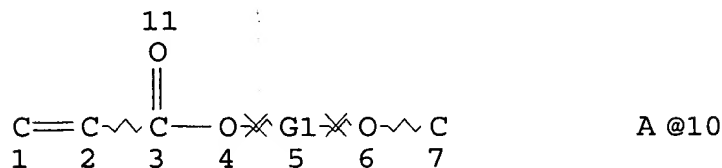
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L14      26050 SEA FILE=REGISTRY SSS FUL L13 AND L12
L16      STR
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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L18 STR



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REP G1=(1-10) 10
NODE ATTRIBUTES:
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NSPEC IS RC AT 7
NSPEC IS RC AT 10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED 7688 ITERATIONS 768 ANSWERS
SEARCH TIME: 00.00.04

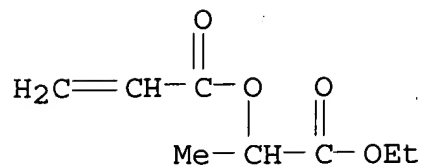
=> file hca
FILE 'HCA' ENTERED AT 11:50:28 ON 07 NOV 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> d l32 1-7 cbib abs hitstr hitind

L32 ANSWER 1 OF 7 HCA COPYRIGHT 2002 ACS
137:224110 Novel .beta.-oxo compounds and their use in
photoresist. Medina, Art; Rushkin, Ilya; Spaziano, Gregory;
Brzozowy, David (Arch Specialty Chemicals, Inc., USA). PCT Int.
Appl. WO 2002068527 A2 20020906, 91 pp. DESIGNATED STATES: W: JP,
KR, SG; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO
2002-US5759 20020221. PRIORITY: US 2001-PV270773 20010223. 7?
AB The present invention relates to polymers which are useful as binder
resins in radiation sensitive **photoresist** compns. for
producing a **resist** image on a substrate. The present
invention relates to polymers comprising monomeric units of
acid sensitive (acid labile) monomers
and from about 2-20 % of monomeric units of .beta.-oxo ester contg.
monomers, wherein the .beta.-oxo ester contg. monomers are free of
lactams or lactones.
IT **455874-57-4P 455874-59-6P**
(prepn. of resins contg. novel .beta.-oxo compds. for
photoresist compn.)
RN 455874-57-4 HCA
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with
bicyclo[2.2.1]hept-2-ene, 2-ethoxy-1-methyl-2-oxoethyl 2-propenoate
and 2,5-furandione (9CI) (CA INDEX NAME)

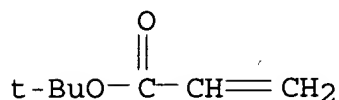
CM 1

CRN 86367-05-7
CMF C8 H12 O4



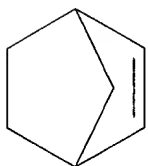
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

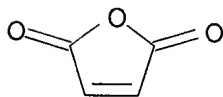
CRN 498-66-8
CMF C7 H10



-a

CM 4

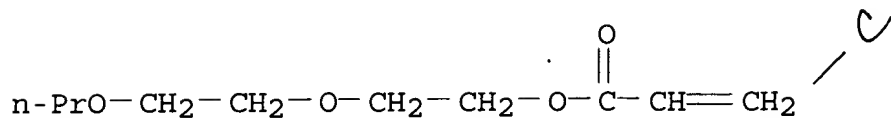
CRN 108-31-6
CMF C4 H2 O3



RN 455874-59-6 HCA
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with
bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 2-(2-
propoxyethoxy)ethyl 2-propenoate (9CI) (CA INDEX NAME)

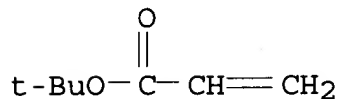
CM 1

CRN 455874-58-5
CMF C10 H18 O4



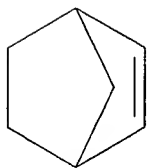
CM 2

CRN 1663-39-4
CMF C7 H12 O2



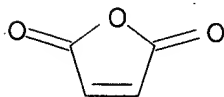
CM 3

CRN 498-66-8
CMF C7 H10



CM 4

CRN 108-31-6
CMF C4 H2 O3



IC ICM C08L
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** resin compn photolithog
IT Photolithography
(UV; prepn. of novel .beta.-oxo compds. for **photoresist**
compn. and)
IT **Photoresists**

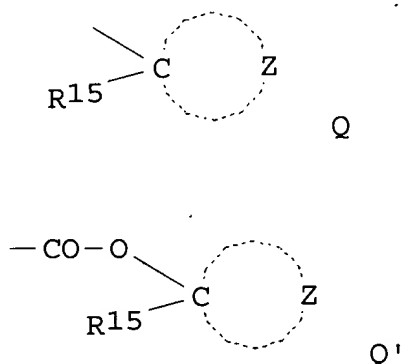
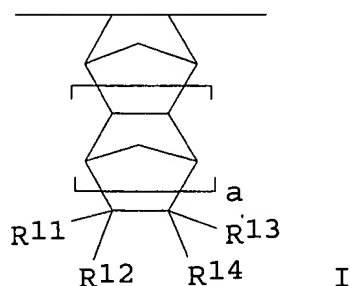
- (novel .beta.-oxo compds. for **photoresist** compn.)
- IT 46399-60-4P 64028-63-3P
(prepn. of novel .beta.-oxo compds. for **photoresist** compn.)
- IT 77-73-6, Dicyclopentadiene 97-64-3, Ethyl lactate 106-74-1
123-42-2, 4-Hydroxy-4-methyl-2-pentanone 513-86-0,
3-Hydroxy-2-butanone 590-67-0, 1-Methylcyclohexanol 599-04-2,
Pantolactone 814-68-6, Acryloyl chloride 2399-48-6,
Tetrahydrofurfuryl acrylate 4780-79-4, 1-Naphthalene methanol
(prepn. of novel .beta.-oxo compds. for **photoresist** compn.)
- IT 53223-83-9P 86367-05-7P 149575-34-8P 153450-27-2P
155844-84-1P 279243-78-6P 455874-54-1P
(prepn. of novel .beta.-oxo compds. for **photoresist** compn.)
- IT 260448-02-0P 279243-97-9P 314295-77-7P 455874-55-2P
455874-56-3P **455874-57-4P 455874-59-6P**
455874-60-9P 455874-61-0P 455874-62-1P 455874-63-2P
455874-64-3P 455874-65-4P 455874-66-5P 455874-67-6P
455874-68-7P 455874-69-8P 455874-70-1P 455874-71-2P
(prepn. of resins contg. novel .beta.-oxo compds. for **photoresist** compn.)

L32 ANSWER 2 OF 7 HCA COPYRIGHT 2002 ACS

136:361828 Positive-working **photoresist** compositions containing norbornene-acrylate copolymers. Sato, Kenichiro; Nakao, Hajime (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002131917 A2 20020509, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-169802 20010605. PRIORITY: JP 2000-174037 20000609; JP 2000-186431 20000621; JP 2000-206812 20000707; JP 2000-206890 20000707; JP 2000-211414 20000712; JP 2000-215441 20000717; JP 2000-248658 20000818.

GI

5/9/02



AB The compns., which show wide defocus latitude, reduced line edge roughness, and high resoln., contain (A) resin which increases its soly. in alk. developers upon reaction of acids and contain (a) a repeating unit I [R11-R14 = H, (un)substituted alkyl; a = 0, 1] and (b) CH₂CR1(ACO₂W) (R1 = H, Me; A = direct bond, alkylene, cycloalkylene, O, ether group, thioether group, O, ester group; W = Q, CR16R17R18, CHR20OR19, CR23R25CR21:CR22R24, R26R29CHR27COR28, Q1; R15 = Me, Et, Pr, CHMe₂, Bu, CH₂CMe₂, CHMeEt; Z = at. group required to form an alicyclic ring; R16-R20 = C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 of R16-R18, R19 or R20 = alicyclyl; R21-R25 = H, C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 R21-R25 = alicyclyl; R23 or R25 = C1-4 linear or branched alkyl, alicyclyl; R26-R29 = C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 of R26-R29 = alicyclyl), (B) compds. which generate acids upon irradiation of actinic ray or radiation, and optionally (C1) R[X(CR51CR52)qCO₂R1]n (X = O, S, NR53, direct bond, R53 = H, alkyl; CO₂R1 = acid-decomposable group; R = n-valent bridged hydrocarbon ring, satd. cyclic hydrocarbon ring, naphthalene ring; n = 1-4; q = 0-10), (C2) naphthalene derivs. II (R60 = alkyl, halo; OR61 = acid-decomposable group; m = 0-4; p = 1-4), or (C3) steroid compds. which contain .gtoreq.2 substituents having .gtoreq.1 carboxyl group protected with **acid-labile** group. The acid generators may be imide sulfonate compds. or diazodisulfonic acids (Markush structures are given) and optionally sulfonium salts. (C1)-(C3) work as dissoln. inhibitors and the compns. give high-resoln. contact hole and trench patterns in fabrication of semiconductor devices.

IT **421555-59-1P 421555-61-5P 421555-67-1P**
(pos.-working **photoresist** compns. contg.
norbornene-acrylate copolymers)

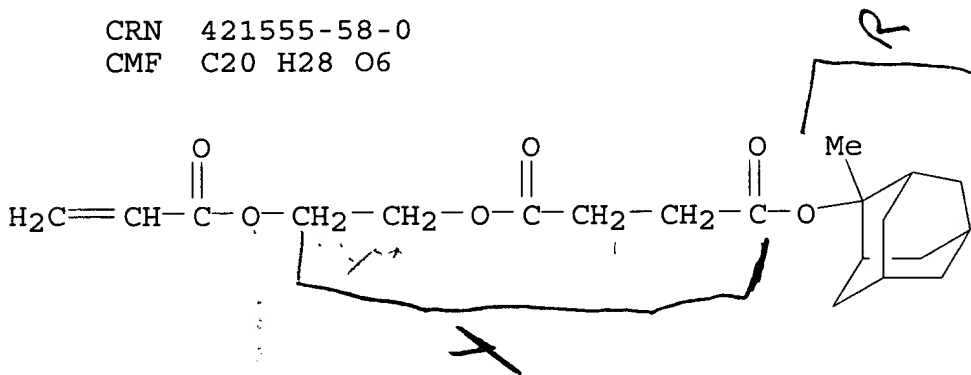
RN 421555-59-1 HCA

CN Butanedioic acid, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl
2-[(1-oxo-2-propenyl)oxy]ethyl ester, polymer with
bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 421555-58-0

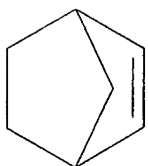
CMF C20 H28 O6



CM 2

CRN 498-66-8

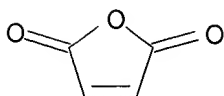
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



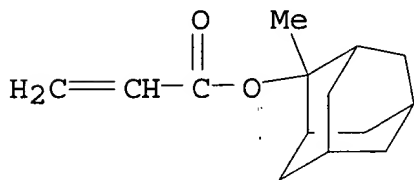
RN 421555-61-5 HCA

CN 2-Propenoic acid, 2-methoxyethyl ester, polymer with 2,5-furandione, 2-methyltricyclo[3.3.1.1^{3,7}]dec-2-yl 2-propenoate and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

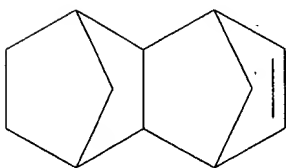
CMF C14 H20 O2



CM 2

CRN 21635-90-5

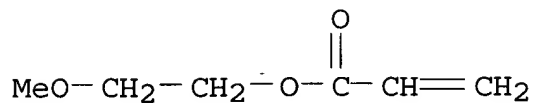
CMF C12 H16



CM 3

CRN 3121-61-7

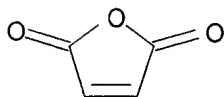
CMF C6 H10 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



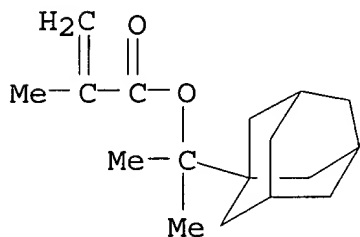
RN 421555-67-1 HCA

CN 2-Propenoic acid, 2-methyl-, 2-methoxyethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1^{3,7}]dec-1-ylethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 279218-76-7

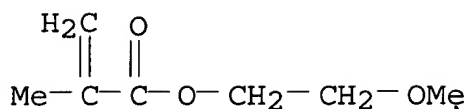
CMF C17 H26 O2



CM 2

CRN 6976-93-8

CMF C7 H12 O3

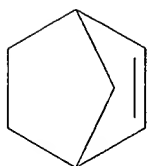


*not acid
labile*

CM 3

CRN 498-66-8

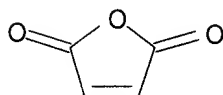
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



IC ICM G03F007-039
ICS C08F232-08; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **photoresist** norbornene acrylate copolymer photoacid generator; dissoln inhibitor butyl deoxycholate glutaryl chloride copolymer

IT Polysiloxanes, uses
(KP 341; pos.-working **photoresist** compns. contg. norbornene-acrylate copolymers)

IT Surfactants
(fluorine-contg. or silicones; pos.-working **photoresist** compns. contg. norbornene-acrylate copolymers)

IT Positive **photoresists**
(pos.-working **photoresist** compns. contg. norbornene-acrylate copolymers)

IT Ketones, uses
(solvents; pos.-working **photoresist** compns. contg. norbornene-acrylate copolymers)

IT 24556-20-5 115298-62-9 115311-03-0 130782-09-1 172615-57-5
207512-00-3 244634-41-1 343223-56-3 421555-75-1 421555-76-2

421555-77-3 421555-78-4 421555-79-5 421555-80-8 421555-81-9
421555-82-0 421555-83-1 421555-84-2

(dissoln. inhibitor; pos.-working **photoresist** compns.
contg. norbornene-acrylate copolymers)

IT 321994-64-3P

(oligomeric, dissoln. inhibitor; pos.-working **photoresist**
compns. contg. norbornene-acrylate copolymers)

IT 14159-45-6 28343-24-0 66003-78-9 81416-37-7 116808-67-4
138529-81-4 138529-84-7 138529-87-0 144089-15-6 144317-44-2
145612-66-4 153698-46-5 153698-67-0 157089-26-4 171417-91-7
177786-96-8 177786-98-0 179419-32-0 211517-08-7 241806-75-7
252937-66-9 258341-98-9 258341-99-0 258342-00-6 258872-05-8
260061-58-3 270563-93-4 284474-28-8 301525-08-6 307976-40-5
312386-77-9 324771-13-3 338445-26-4 338445-30-0 341979-02-0
343629-55-0 350249-87-5 391232-40-9 421555-68-2 421555-69-3
421555-70-6 421555-71-7 421555-72-8 421555-73-9 421555-74-0

(photoacid generator; pos.-working **photoresist** compns.
contg. norbornene-acrylate copolymers)

IT 249562-07-0P 249562-17-2P, Maleic anhydride-2-methyl-2-adamantyl
acrylate-norbornene copolymer 260448-02-0P, tert-Butyl
acrylate-maleic anhydride-norbornene copolymer 351867-96-4P
421555-57-9P **421555-59-1P** 421555-60-4P
421555-61-5P 421555-62-6P 421555-63-7P 421555-64-8P
421555-65-9P 421555-66-0P **421555-67-1P**

(pos.-working **photoresist** compns. contg.
norbornene-acrylate copolymers)

IT 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3 6674-22-2, DBU
137462-24-9, Megafac F176 216679-67-3, Megafac R08

(pos.-working **photoresist** compns. contg.
norbornene-acrylate copolymers)

IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate
97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 110-43-0,
2-Heptanone 123-86-4, Butyl acetate 763-69-9 1320-67-8,
Propylene glycol monomethyl ether 84540-57-8, Propylene glycol
monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl
ether propionate

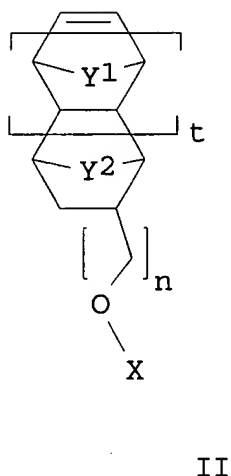
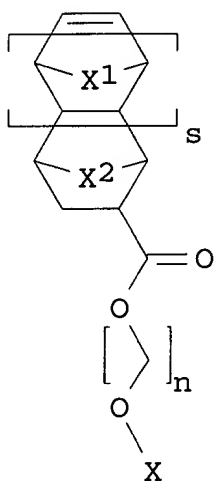
(solvent; pos.-working **photoresist** compns. contg.
norbornene-acrylate copolymers)

L32 ANSWER 3 OF 7 HCA COPYRIGHT 2002 ACS

136:191690 Acrylic **photoresist** polymers bearing
cyclotetrasiloxanyl groups, their preparation, composition, and
photolithography thereof. Lee, Geun Su; Koh, Cha Won; Jung, Jae
Chang; Jung, Min Ho; Baik, Ki Ho (Hynix Semiconductor Co., Ltd., S.
Korea). Jpn. Kokai Tokkyo Koho JP 2002053623 A2 20020219, 22 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-188341 20010621.
PRIORITY: KR 2000-34102 20000621.

GI

2/19/00
Appendix
application
9-852371



AB The polymers with mol. wt. 3000-50,000 are prepd. by polymn. of (i) monomers represented by $R_5C(:CH_2)CO_2(CH_2)_nOX$ [R_1-4 (in X definition) = H, C1-10 alkyl; R_5 = H, Me], I (X_1, X_2 = CH_2, CH_2CH_2 ; s = 0, 1, 2), and/or II (Y_1, Y_2 = CH_2, CH_2CH_2 ; t = 0, 1, 2), (ii) $R_6C(:CH_2)(CH_2)_mCO_2R_7$ (R_6 = H, Me; R_7 = **acid-labile** protective group; m = 0-5 integer), and (iii) (meth)acrylic acid and may contain crosslinking agents $R_9C(:CH_2)CO_2CR_{11}R_{12}YCR_{13}R_{14}OCOC(:CH_2)R_{10}$ and/or maleic anhydride. The polymers are prepd. by catalyst-assisted polymn. Chem.-amplified pos. **photoresists** comprising the polymers are also claimed. A bilayer **resist** process employing the **photoresists** and underlayers which are chosen from bottom antireflective coatings or i- or g-line photosensitizer coatings, is further claimed. The **photoresists** keep pattern sharpness during plasma etching for the underlayer patterning.

IT 399557-23-4P 399557-24-5P

(Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)

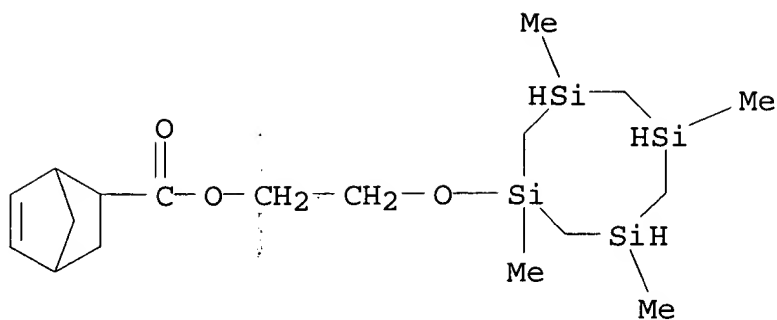
RN 399557-23-4 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-[(1,3,5,7-tetramethyl-1,3,5,7-tetrasilacyclooct-1-yl)oxy]ethyl ester, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate, 2,5-furandione, 2-methyl-2-propenoic acid and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 356043-16-8

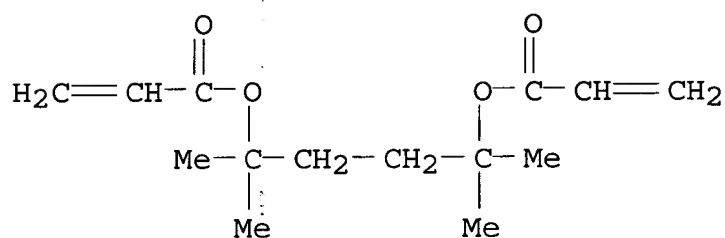
CMF C18 H36 O3 Si4



CM 2

CRN 188837-15-2

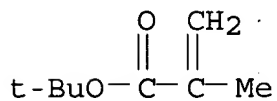
CMF C14 H22 O4



CM 3

CRN 585-07-9

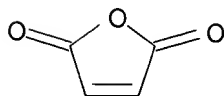
CMF C8 H14 O2



CM 4

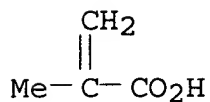
CRN 108-31-6

CMF C4 H2 O3



CM 5

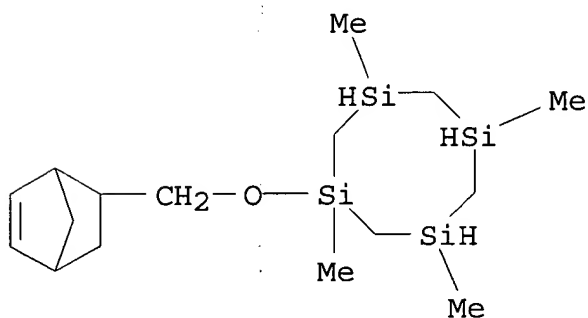
CRN 79-41-4
CMF C4 H6 O2



RN 399557-24-5 HCA
CN 2-Propenoic acid, 2-methyl-, polymer with 1-(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)-1,3,5,7-tetramethyl-1,3,5,7-tetrasilacyclooctane, 1,1-dimethylethyl 2-methyl-2-propenoate, 2,5-furandione and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

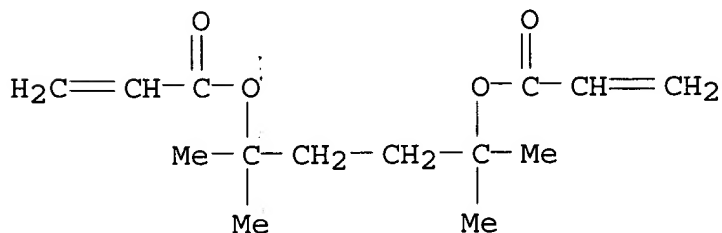
CM 1

CRN 356043-17-9
CMF C16 H34 O Si4



CM 2

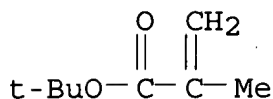
CRN 188837-15-2
CMF C14 H22 O4



CM 3

CRN 585-07-9

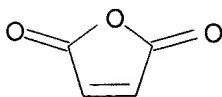
CMF C8 H14 O2



CM 4

CRN 108-31-6

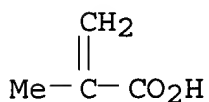
CMF C4 H2 O3



CM 5

CRN 79-41-4

CMF C4 H6 O2



- IC ICM C08F230-08
ICS C08F220-28; C08K005-00; C08L101-02; G03F007-004; G03F007-039;
G03F007-075; G03F007-11; G03F007-26; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38, 76
- ST silicon rich acrylic **photoresist** cyclosiloxanyl protected;
amplified **photoresist** acrylic cyclosiloxanyl protective
group; semiconductor bilayer **resist** photolithog acrylic
photoresist
- IT Semiconductor device fabrication
(Si-rich acrylic polymers bearing **acid-labile**
cyclosiloxanyl groups for **photoresists** with superior
etching resistance)
- IT Positive **photoresists**
(UV, deep-UV, chem. amplified; Si-rich acrylic polymers bearing
acid-labile cyclosiloxanyl groups for
photoresists with superior etching resistance)
- IT Protective groups
(**acid-labile**, cyclotetrasiloxanyl; Si-rich
acrylic polymers bearing **acid-labile**
cyclosiloxanyl groups for **photoresists** with superior
etching resistance)

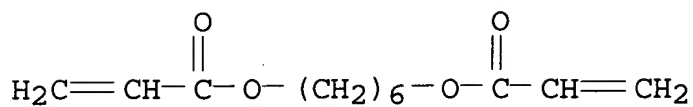
- IT Photolithography
(bilayer **resist** process; Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- IT **Resists**
(etching, plasma etching; Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- IT **Resists**
(radiation-sensitive, polymers; Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- IT 399557-22-3P 399557-23-4P 399557-24-5P
(Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- IT 356043-15-7P 356043-16-8P 356043-17-9P
(Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- IT 95-12-5, 5-Norbornene-2-methanol 818-61-1, 2-Hydroxyethyl acrylate
2370-88-9, 2,4,6,8-Tetramethylcyclotetrasiloxane 37503-42-7,
2-Hydroxyethyl 5-norbornene-2-carboxylate
(Si-rich acrylic polymers bearing **acid-labile** cyclosiloxanyl groups for **photoresists** with superior etching resistance)
- L32 ANSWER 4 OF 7 HCA COPYRIGHT 2002 ACS
- 132:144488 Organic electroluminescent display devices with high luminescent efficiency. Suzuki, Katsuhiro; Minato, Takao (Toppan Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000040584 A2 20000208, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-207810 19980723.
- AB In the devices comprising transparent substrates successively coated with anodes, org. electroluminescent layers, and cathodes, dot-like unevenness is randomly formed on the substrates. The unevenness shows dot diam. .ltoreq.10 .mu.m and height .gtoreq.500 .ANG.. The unevenness may be obtained by forming photosensitive polymer films on the substrates, pattern-like exposing, and heating. Effect of mirror reflection of metal electrodes is prevented.
- IT **257290-92-9P**, Chlorendic anhydride-Epo Tohto YDPN
601-1,6-hexanediol diacrylate copolymer acrylate
(uneven coatings; prevention of reflection of metal electrodes in org. electroluminescent displays)
- RN **257290-92-9** HCA
- CN 2-Propenoic acid, 1,6-hexanediyl ester, polymer with Epo Tohto YDPN
601 2-propenoate and 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-4,7-methanoisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

CM 1

CRN 13048-33-4

2/8/00

CMF C12 H18 O4

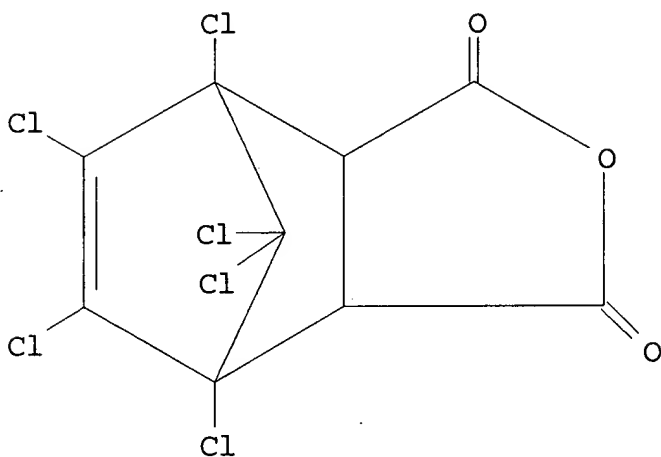


(2)

CM 2

CRN 115-27-5

CMF C9 H2 Cl6 O3



CM 3

CRN 143710-84-3

CMF C3 H4 O2 . x Unspecified

CM 4

CRN 97666-49-4

CMF Unspecified

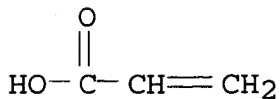
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 5

CRN 79-10-7

CMF C3 H4 O2



(4)

IC ICM H05B033-02
ICS H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

ST electroluminescent display metal electrode reflection prevention;
photoresist polymer uneven coating electroluminescent display

IT Negative **photoresists**
(uneven coatings; prevention of reflection of metal electrodes in org. electroluminescent displays)

IT 257290-92-9P, Chlorendic anhydride-Epo Tohto YDPN
601-1,6-hexanediol diacrylate copolymer acrylate
(uneven coatings; prevention of reflection of metal electrodes in org. electroluminescent displays)

L32 ANSWER 5 OF 7 HCA COPYRIGHT 2002 ACS
127:240859 ArF **photoresist** system using alicyclic polymer.
Park, Joo-Hyeon; Kim, Seong-Ju; Park, Sun-Yi; Lee, Hosull; Jung, Jae-Chang; Bok, Cheol-Kyu; Baik, Ki-Ho (Korea Kumho Petrochemical Co., Ltd., Kumho Chemical Labs., Taejon-City, S. Korea).
Proceedings of SPIE-The International Society for Optical Engineering, 3049 (Advances in Resist Technology and Processing XIV), 485-491 (English) 1997. CODEN: PSISDG. ISSN: 0277-786X.
Publisher: SPIE-The International Society for Optical Engineering.

AB We have developed a chem. amplified **photoresist** for use in ArF lithog. based on alicyclic polymer. 3-Bicyclo[2,2,1]hept-2-yl-3-(2-Me allyoxy)-propionic acid tert-Bu ester (BHPE) was prepd. as a new kind of protected **acid-labile** monomer.
Terpolymer, poly(BHPE-NBO-MAL), was prepd. with BHPE, 5-norbornen-2-ol (NBO), and maleic anhydride (MAL) monomers by radical polymn. **Photoresist** of poly(BHPE-NBO-MAL) displayed good adhesion, dry-etch resistance, and development. As a result, we obtained 0.16 .mu.m line-and-space pos. patterns with 2.38 wt% TMAH aq. soln. using an ArF exposure system.

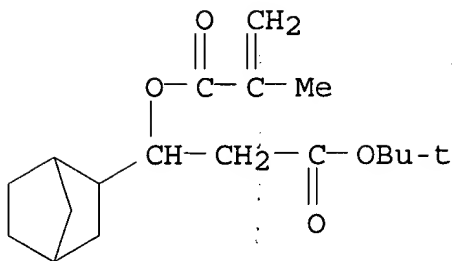
IT 195325-48-5P
(chem. amplified **photoresist** for use in ArF lithog. based on alicyclic polymer)

RN 195325-48-5 HCA

CN Bicyclo[2.2.1]heptane-2-propanoic acid, .beta.-[(2-methyl-1-oxo-2-propenyl)oxy]-, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-5-en-2-ol and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

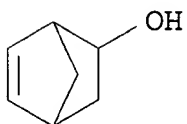
CRN 195325-46-3
CMF C18 H28 O4



CM 2

CRN 13080-90-5

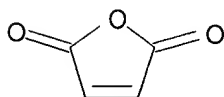
CMF C7 H10 O



CM 3

CRN 108-31-6

CMF C4 H2 O3



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 36

ST chem amplified **photoresist** photolithog alicyclic polymer

IT Photolithography

Photoresists

(chem. amplified **photoresist** for use in ArF lithog. based on alicyclic polymer)

IT Polymerization

(radical; chem. amplified **photoresist** for use in ArF lithog. based on alicyclic polymer)

IT 195245-82-0P 195325-49-6P

(chem. amplified **photoresist** for use in ArF lithog. based on alicyclic polymer)

IT 108-31-6, 2,5-Furandione, reactions 920-46-7, Methacryloyl chloride 5292-43-3, tert-Butyl bromoacetate 5453-80-5, 5-Norbornene-2-carboxaldehyde 13080-90-5, 5-Norbornene-2-ol (chem. amplified **photoresist** for use in ArF lithog.)

- based on alicyclic polymer)
- IT 195325-48-5P
(chem. amplified **photoresist** for use in ArF lithog.
based on alicyclic polymer)
- IT 75-59-2, Tetramethylammonium hydroxide
(developer; chem. amplified **photoresist** for use in ArF
lithog. based on alicyclic polymer)
- IT 78-67-1, N,N'-Azobis(isobutyronitrile)
(initiator; chem. amplified **photoresist** for use in ArF
lithog. based on alicyclic polymer)
- IT 195325-46-3P
(monomer; chem. amplified **photoresist** for use in ArF
lithog. based on alicyclic polymer)
- IT 66003-78-9, Triphenylsulfonium triflate
(photoacid generator; chem. amplified **photoresist** for
use in ArF lithog. based on alicyclic polymer)
- IT 3852-09-3, Methyl-3-methoxy propionate
(solvent; chem. amplified **photoresist** for use in ArF
lithog. based on alicyclic polymer)
- IT 104-15-4, p-Toluenesulfonic acid, uses
(thermal properties of terpolymer contg. alicyclic group measured
in presence of p-toluenesulfonic acid for **resist**
application)

L32 ANSWER 6 OF 7 HCA COPYRIGHT 2002 ACS

125:278139 Manufacture of phenolic resins and epoxy resins for
laminates, sealants, and solder **resists** and photocurable
compositions. Ootsuki, Yutaka; Yuasa, Hitoshi; Oshimi, Fumiaki;
Enomoto, Masami (Nippon Oil Co Ltd, Japan). Jpn. Kokai Tokkyo Koho
JP 08208812 A2 19960813 Heisei, 22 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1995-20666 19950208.

AB Epoxy resin compns. are obtained from epihalohydrins and phenolic
resins prepd. by treating (A) olefins comprising 10-90% C4-5
conjugated diene polymers and 10-90% C4-15 hydrocarbon dienes with
(B) phenols in the presence of acid catalysts. Photocurable compns.
contain photocurable polymers obtained from the epoxy resins,
(meth)acrylic acids, and .alpha.,.beta.-dicarboxylic acid anhydrides
and photopolymer. initiators. Thus, 100 parts copolymer obtained
from PhOH, Nisseki B 700, and dicyclopentadiene and 12 parts
hexamethylenetetramine were mixed with glass fibers 145,
wollastonite 90, Mg stearate 1, and carbon black 5 parts, melt
kneaded, and pressed to give a test piece showing good heat
resistance and low water absorption.

IT 182508-76-5P 182508-77-6P 182508-78-7P
(manuf. of phenolic resins and epoxy resins for laminates,
sealants, and photocurable solder **resists**)

RN 182508-76-5 HCA

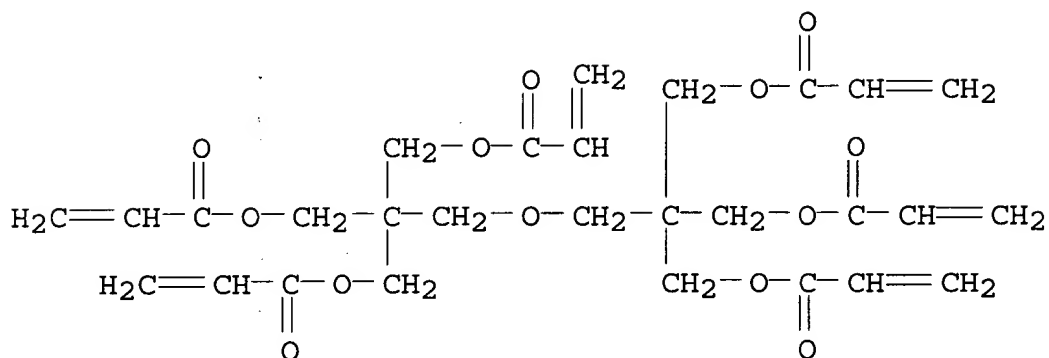
CN 2-Propenoic acid, 2-[[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-
propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-
propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with
1,3-butadiene, (chloromethyl)oxirane, Epo Tohto YDCN 702
2-propenoate, hexahydro-1,3-isobenzofurandione, phenol and

3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 29570-58-9

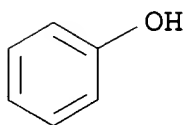
CMF C28 H34 O13



CM 2

CRN 108-95-2

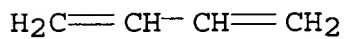
CMF C6 H6 O



CM 3

CRN 106-99-0

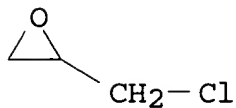
CMF C4 H6



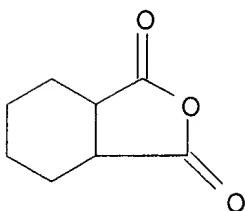
CM 4

CRN 106-89-8

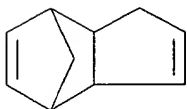
CMF C3 H5 Cl O



CM 5

CRN 85-42-7
CMF C8 H10 O3

CM 6

CRN 77-73-6
CMF C10 H12

CM 7

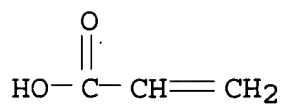
CRN 126040-06-0
CMF C3 H4 O2 . x Unspecified

CM 8

CRN 109190-39-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 9

CRN 79-10-7
CMF C3 H4 O2

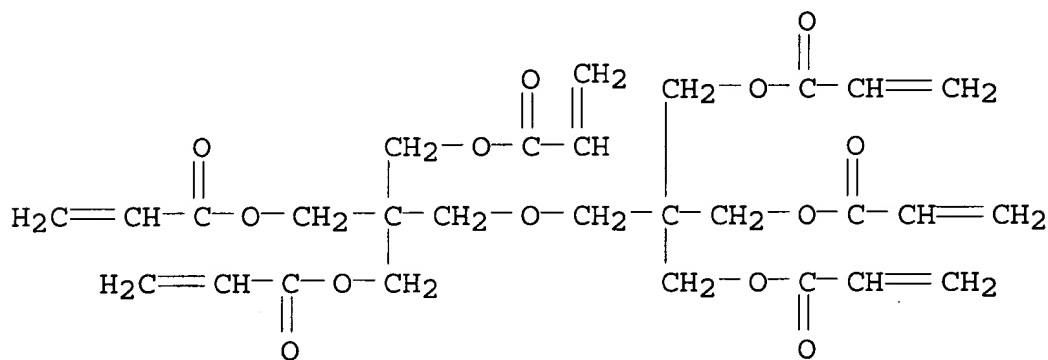
RN 182508-77-6 HCA

CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 1,3-butadiene, (chloromethyl)oxirane, Epo Tohto YDCN 702 2-propenoate, hexahydro-1,3-isobenzofurandione, 2-methylphenol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 29570-58-9

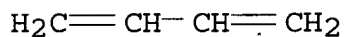
CMF C28 H34 O13



CM 2

CRN 106-99-0

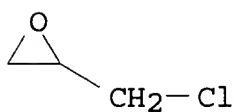
CMF C4 H6



CM 3

CRN 106-89-8

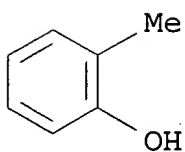
CMF C3 H5 Cl O



CM 4

CRN 95-48-7

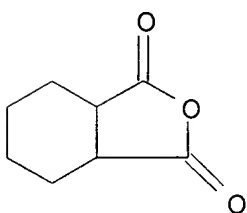
CMF C7 H8 O



CM 5

CRN 85-42-7

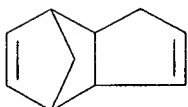
CMF C8 H10 O3



CM 6

CRN 77-73-6

CMF C10 H12



CM 7

CRN 126040-06-0

CMF C3 H4 O2 . x Unspecified

CM 8

CRN 109190-39-8

CMF Unspecified

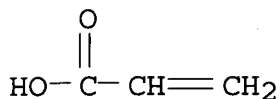
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 9

CRN 79-10-7

CMF C3 H4 O2



RN 182508-78-7 HCA

2-Propenoic acid, 2-[[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 1,3-butadiene polymer with (chloromethyl)oxirane, phenol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene 2-propenoate, dihydro-2,5-furandione and Epo Tohto YDCN 704 (9CI) (CA INDEX NAME)

CM 1

CRN 94362-50-2

CMF Unspecified

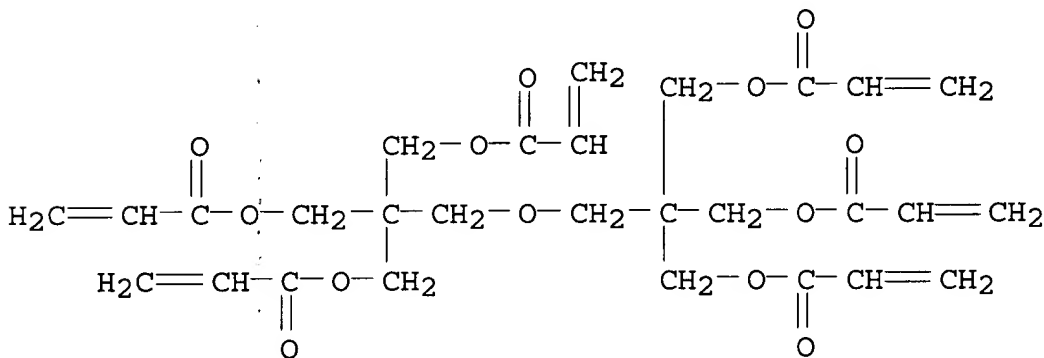
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9

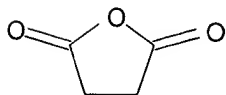
CMF C28 H34 O13



CM 3

CRN 108-30-5

CMF C4 H4 O3



CM 4

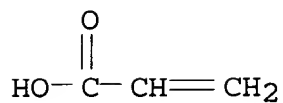
CRN 182508-72-1

CMF (C10 H12 . C6 H6 O . C4 H6 . C3 H5 Cl O)x . x C3 H4 O2

CM 5

CRN 79-10-7

CMF C3 H4 O2



CM 6

CRN 182281-41-0

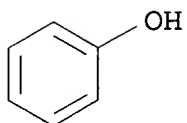
CMF (C10 H12 . C6 H6 O . C4 H6 . C3 H5 Cl O)x

CCI PMS

CM 7

CRN 108-95-2

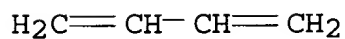
CMF C6 H6 O



CM 8

CRN 106-99-0

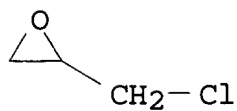
CMF C4 H6



CM 9

CRN 106-89-8

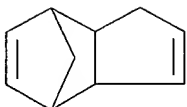
CMF C3 H5 Cl O



CM 10

CRN 77-73-6

CMF C10 H12



IC ICM C08G061-00
 ICS C08G059-06; C08G059-14; C08G059-18; C08K005-00; C08L063-00;
 C08L065-00; G03F007-027; G03F007-028; G03F007-038; H01L023-29;
 H01L023-31; H05K003-18; H05K003-28

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 42, 74

ST butadiene phenolic resin heat resistance; water resistance butadiene
 phenolic resin; epoxy resin laminate heat resistance; sealant epoxy
 resin heat resistance; solder **resist** epoxy resin
 photocurable

IT Chemically resistant materials
 Crosslinking agents
 Heat-resistant materials
 Sealing compositions
 Water-resistant materials
 (manuf. of phenolic resins and epoxy resins for laminates,
 sealants, and photocurable solder **resists**)

IT Epoxy resins, uses
 Phenolic resins, uses
 (manuf. of phenolic resins and epoxy resins for laminates,
 sealants, and photocurable solder **resists**)

IT Crosslinking
 (photochem., manuf. of phenolic resins and epoxy resins for
 laminates, sealants, and photocurable solder **resists**)

IT **Resists**
 (solder, manuf. of phenolic resins and epoxy resins for
 laminates, sealants, and photocurable solder **resists**)

IT 182281-48-7P 182281-49-8P 182281-50-1P 182281-51-2P
 182281-52-3P 182281-53-4P 182281-54-5P 182281-55-6P
 182281-56-7P 182281-57-8P 182281-59-0P 182281-61-4P
 182281-64-7P 182281-67-0P 182281-70-5P 182281-73-8P
 182282-17-3P 182282-18-4P **182508-76-5P**
182508-77-6P 182508-78-7P
 (manuf. of phenolic resins and epoxy resins for laminates,
 sealants, and photocurable solder **resists**)

IT 163149-15-3P, Butadiene-dicyclopentadiene-phenol copolymer
 182281-41-0P, Butadiene-dicyclopentadiene-epichlorohydrin-phenol
 copolymer 182281-42-1P, Butadiene-o-cresol-dicyclopentadiene
 copolymer 182281-43-2P 182281-44-3P, Butadiene-phenol-
 vinylcyclohexene copolymer 182281-45-4P 182281-46-5P

182281-47-6P 182508-73-2P 182508-75-4P, YDCN 702
acrylate-hexahydrophthalic anhydride copolymer
(manuf. of phenolic resins and epoxy resins for laminates,
sealants, and photocurable solder **resists**)

L32 ANSWER 7 OF 7 HCA COPYRIGHT 2002 ACS

118:136238 Patterning of gold film. Kushi, Kenji; Inukai, Kenichi;
Izeki, Takayuki; Fujimoto, Yasuyuki; Koyanagi, Seiya (Mitsubishi
Rayon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04039664 A2
19920210 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
JP 1990-146086 19900606.

AB The title patterning has the steps of: (1) forming an
alkali-developable photosensitive resin interlayer on a metal
substrate; (2) laminating an alkali-developable dry-**resist**
film; (3) effecting imagewise exposure of the aforementioned 2 films
to harden them, and developing them with an alkali developer to
remove an unexposed region; and (4) effecting electroplating of Au.
This patterning is characterized by use of said photosensitive resin
interlayer which with an acid value 10-100, contains (a) a copolymer
which as a thermoplastic binder and with glass transition temp.
60-100.degree., is made up of (1) Ph-C(R):CH₂ [R = H, C1-6 alkyl,
halo] 3-30%, (2) .gtoreq.1 compd. 15-45% selected from C1-6 alkyl
acrylate and C2-6 hydroxy alkyl acrylate, (3) .gtoreq.1 compd.
25-60% selected from C1-6 alkyl methacrylate, and (3) C2-6 hydroxy
methacrylate, C3-15 .alpha., .beta.-unsatd. COOH-bearing monomer(s)
15-35%, (b) a monomer 25-50% contg. .gtoreq.1 OH and .gtoreq.2
ethylenic unsatd. moieties, and (c) a photopolymn. initiator 0-10%.
This patterning can be used in fabrication of a printed circuit
board.

IT 146057-34-3

(alkali-developable photosensitive resin film, patterning of gold
film by)

RN 146057-34-3 HCA

CN 2-Propenoic acid, polymer with 2,2-dimethyl-1,3-propanediyl
di-2-propenoate, 2,5-furandione, 2,2'-[(1-methylethylidene)bis(4,1-
phenyleneoxymethylene)]bis[oxirane] and 2-(3a,4,7,7a-tetrahydro-4,7-
methano-1H-indenyl)ethyl 2-propenoate (9CI) (CA INDEX NAME)

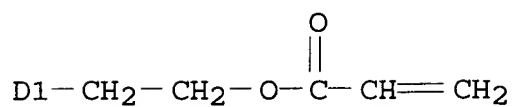
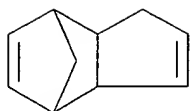
CM 1

CRN 130725-08-5

CMF C15 H18 O2

CCI IDS

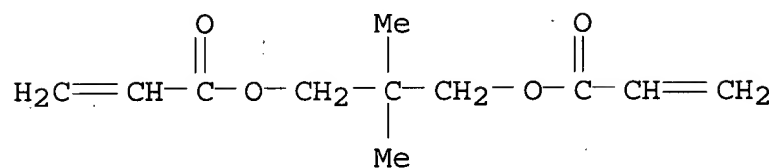
2/10/92



CM 2

CRN 2223-82-7

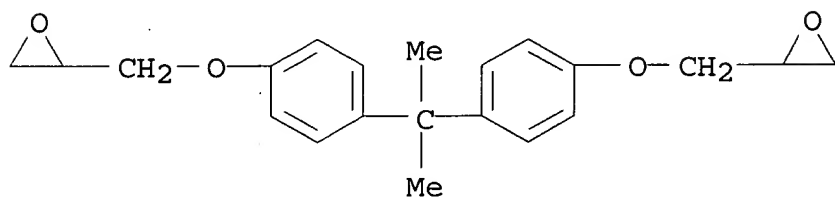
CMF C11 H16 O4



CM 3

CRN 1675-54-3

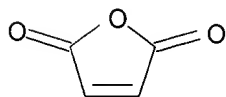
CMF C21 H24 O4



CM 4

CRN 108-31-6

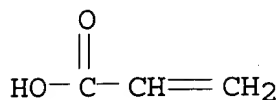
CMF C4 H2 O3



CM 5

CRN 79-10-7

CMF C3 H4 O2



IC ICM G03F007-027

ICS G03F007-26; G03F007-40; H01L021-027; H05K003-24

ICA H05K003-18

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT **Resists**

(photo-, patterning of gold film by)

IT 79-10-7D, 2-Propenoic acid, acrylated, reaction product with succinic anhydride 108-30-5D, Succinic anhydride, acrylated, reaction product with acrylic acid 2223-82-7D, Neopentyl glycol diacrylate, reaction product with epoxy resin 16969-10-1D, 3-Phenoxy-2-hydroxypropyl acrylate, reaction product with epoxy resin 130725-08-5D, reaction product with epoxy resin 146057-30-9 146057-31-0 146057-32-1 146057-33-2
146057-34-3 146057-35-4

(alkali-developable photosensitive resin film, patterning of gold film by)

IT 146057-25-2 146057-26-3 146057-27-4 146057-28-5 146057-29-6
 146332-21-0

(dry-resist film, patterning of gold film by)

IT 7440-57-5, Gold, uses

(film, patterning of, by using photoresist film)

=> d his 136-

(FILE 'HCA' ENTERED AT 11:43:20 ON 07 NOV 2002)

FILE 'REGISTRY' ENTERED AT 11:49:15 ON 07 NOV 2002

FILE 'HCA' ENTERED AT 11:50:28 ON 07 NOV 2002

L36 12823 S ACID? (2A) SENS?

L37 0 S L27 AND L36

L38 15 S L26 AND L36

L39 15 S L38 AND L25

L40 1 S L39 AND 1907-1999/PY

L41 3 S L39 AND 1907-2000/PY

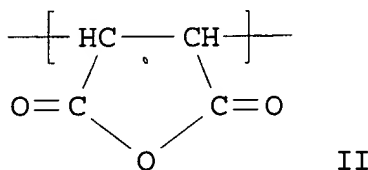
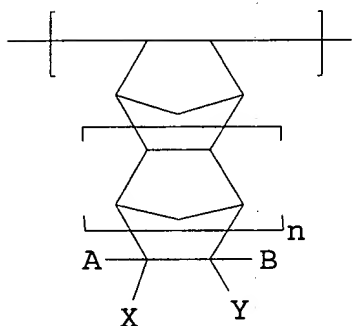
L42 3 S L41 NOT L32

=> d 142 1-3 cbib abs hitstr hitind

L42 ANSWER 1 OF 3 HCA COPYRIGHT 2002 ACS

133:357243 Radiation sensitive resin composition. Yamahara, Noboru; Murata, Kiyoshi; Iwanaga, Shinichiro; Ishii, Hiroyuki; Iwasawa, Haruo (Jsr Corp., Japan). Eur. Pat. Appl. EP 1048983 A1 20001102, 40 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-108941 20000427. PRIORITY: JP 1999-122723 19990428.

GI



4/27/00

AB The present invention provides a radiation sensitive resin compn. which comprises (A) a resin represented by a copolymer comprising recurring units I, II, and $[\text{CH}_2\text{R}_1(\text{COOR}_2\text{OH})]$, or I, II, and $[\text{CH}_2\text{R}_1(\text{COOR}_3\text{OH})]$ (X and Y = H, C1-4 alkyl; n = 0-3; R1 = H, Me methylol; R2 = divalent hydrocarbon; R3 = trivalent hydrocarbon), and (B) a radiation **sensitive acid**-generator.

The radiation sensitive resin compn. has an excellent storage stability and the **resist** produced from the compn. is a chem. amplifiable type sensitive to radiations represented by artificial UV rays. The **resist** has a high transparency to radiations and it is excellent in basic phys. properties for **resist** such as durability to dry etching, sensitivity, resolu., and pattern configuration.

IT 305379-03-7P 305384-38-7P

(radiation sensitive resin compn. from)

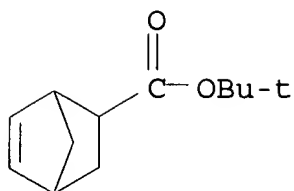
RN 305379-03-7 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1^{3,7}]dec-1-yl 2-methyl-2-propenoate and (octahydro-4,7-methano-1H-indene-2,5-diyl)bis(methylene) di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 154970-45-3

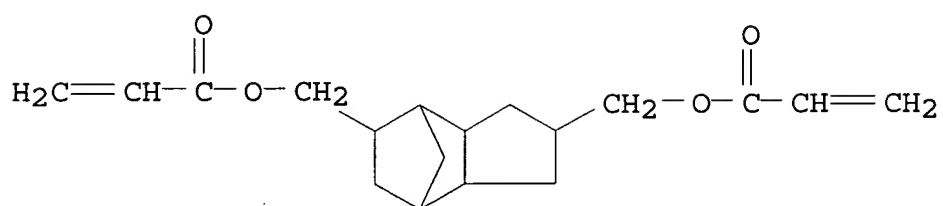
CMF C12 H18 O2



CM 2

CRN 116738-40-0

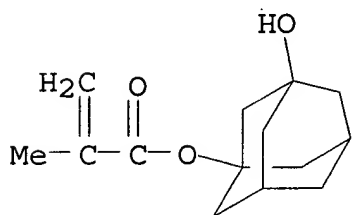
CMF C18 H24 O4



CM 3

CRN 115372-36-6

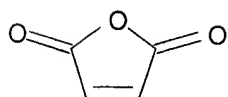
CMF C14 H20 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



RN 305384-38-7 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,

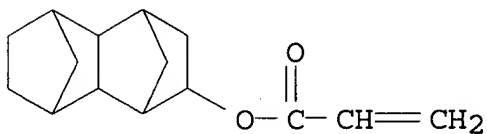
polymer with decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl 2-propenoate, 2,5-furandione and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 259536-03-3

CMF C15 H20 O3

CCI IDS

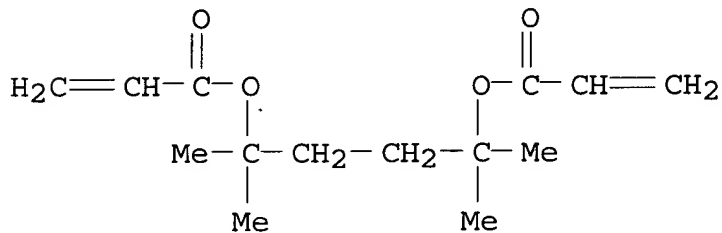


D1-OH

CM 2

CRN 188837-15-2

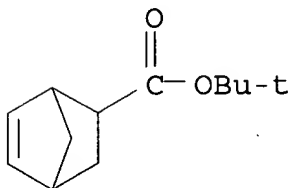
CMF C14 H22 O4



CM 3

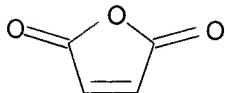
CRN 154970-45-3

CMF C12 H18 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST radiation sensitive resin compn photoacid **photoresist**
IT Photoimaging materials

Photoresists

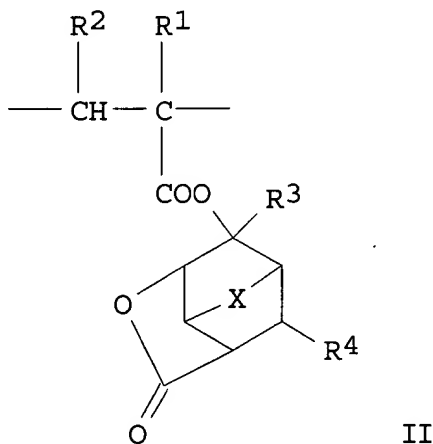
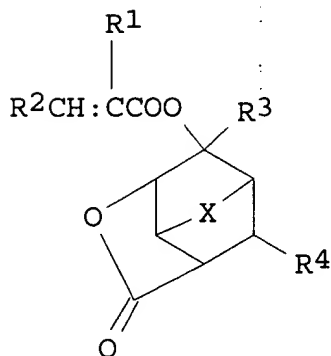
(radiation sensitive resin compn. for)

IT **305379-03-7P** 305379-05-9P 305379-06-0P 305379-07-1P
305379-09-3P 305379-11-7P 305379-12-8P 305379-13-9P
305384-35-4P 305384-37-6P **305384-38-7P**
(radiation sensitive resin compn. from)

L42 ANSWER 2 OF 3 HCA COPYRIGHT 2002 ACS

133:36088 Novel lactone compound, its polymer, **resist** composition containing polymer, and pattern formation. Hasegawa, Koshi; Nishi, Tsunehiro; Kaneo, Takeshi; Hatakeyama, Jun; Watanabe, Osamu (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000159758 A2 **20000613**, 42 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-255167 19990909. PRIORITY: JP 1998-270673 19980925.

GI



AB The lactone compd. I [R1 = H, Me, CH₂CO₂R₅; R2 = H, Me, CO₂R₅; R3 = C1-8 (branched) (cyclic) alkyl; R4 = H, CO₂R₅; R5 = C1-15 (cyclic) (branched) alkyl; X = CH₂, CH₂CH₂, O, S] is claimed. A polymer with

wt. av. mol. wt. 1000-500,000 having II (R1-4 and X are the same as in I) as a repeating unit is also claimed. The polymer is prepd. by radical or anionic copolymn. of I with other compd(s). having C:C double bond. The **resist** comprises the polymer and an optional acid generator which generates acid by irradiation and organic solvents. The pattern is formed according to the steps; coating the **resist** compn. on a substrate, irradiating the **resist** with high energy ray or an electron beam through a **photomask** after heat treatment, optionally post heat-treating, and developing the compn. The **resist** compn. shows high sensitivity, resolution, and etching resistance, and gives fine patterns with good profile.

IT 274248-29-2P 274248-33-8P

(radiation-sensitive **resist** compn. contg. acrylic polymer having lactone structure)

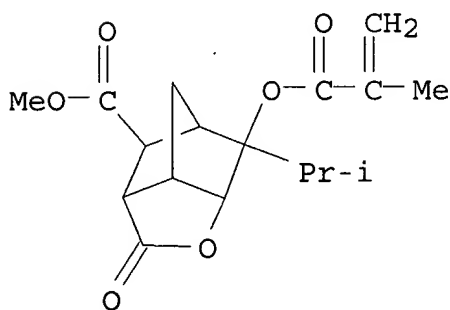
RN 274248-29-2 HCA

CN 3,5-Methano-2H-cyclopenta[b]furan-7-carboxylic acid, hexahydro-6-(1-methylethyl)-6-[(2-methyl-1-oxo-2-propenyl)oxy]-2-oxo-, methyl ester, polymer with bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 274248-28-1

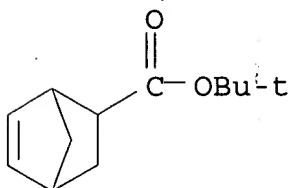
CMF C17 H22 O6



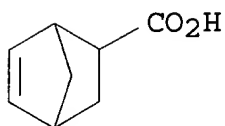
CM 2

CRN 154970-45-3

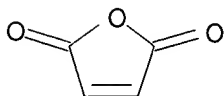
CMF C12 H18 O2



CM 3

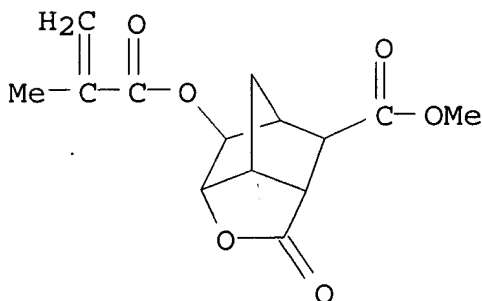
CRN 120-74-1
CMF C8 H10 O2

CM 4

CRN 108-31-6
CMF C4 H2 O3

RN 274248-33-8 HCA
CN 3,5-Methano-2H-cyclopenta[b]furan-7-carboxylic acid,
hexahydro-6-[(2-methyl-1-oxo-2-propenyl)oxy]-2-oxo-, methyl ester,
polymer with bicyclo[2.2.1]hept-5-ene-2-carboxylic acid,
2,5-furandione and tetrahydro-2H-pyran-2-yl bicyclo[2.2.1]hept-5-ene-
2-carboxylate (9CI) (CA INDEX NAME)

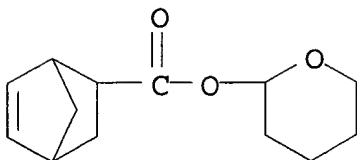
CM 1

CRN 274247-93-7
CMF C14 H16 O6

CM 2

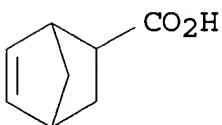
CRN 154924-11-5

CMF C13 H18 O3



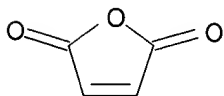
CM 3

CRN 120-74-1
CMF C8 H10 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



IC ICM C07D307-93
ICS C07D493-18; C08F020-28; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38
ST lactone acrylic polymer radiation **resist**
IT **Resists**
(radiation-sensitive; radiation-sensitive **resist** compn.
contg. acrylic polymer having lactone structure)
IT 14159-45-6 34684-40-7 66003-78-9 71682-26-3 138529-81-4
138529-84-7 141573-11-7 161453-44-7
(acid generator; radiation-sensitive
resist compn. contg. acrylic polymer having lactone
structure)
IT 274247-94-8P 274247-96-0P 274247-98-2P 274248-00-9P
274248-02-1P 274248-04-3P 274248-06-5P 274248-07-6P
274248-08-7P 274248-10-1P 274248-11-2P 274248-13-4P
274248-14-5P 274248-15-6P 274248-16-7P 274248-17-8P
274248-18-9P 274248-19-0P 274248-20-3P 274248-21-4P
274248-22-5P 274248-24-7P 274248-25-8P 274248-26-9P

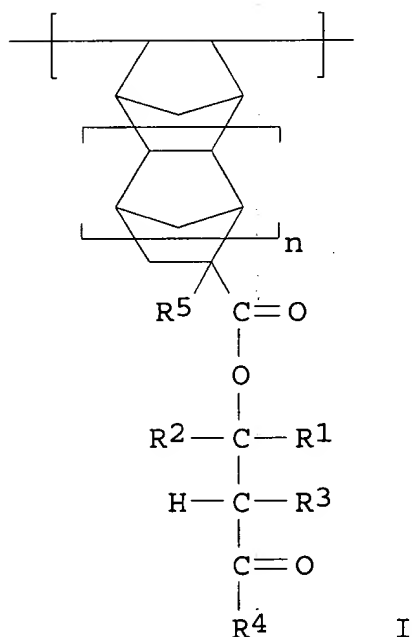
274248-27-0P **274248-29-2P** 274248-31-6P 274248-32-7P
274248-33-8P 274248-34-9P 274248-35-0P 274248-36-1P
 274248-37-2P 274257-05-5P 274257-08-8P 274257-11-3P
 274257-14-6P 274257-17-9P 274257-20-4P

(radiation-sensitive **resist** compn. contg. acrylic
 polymer having lactone structure)

L42 ANSWER 3 OF 3 HCA COPYRIGHT 2002 ACS

131:221220 Radiation-sensitive resin composition useful as chemically
 amplified **resist**. Suwa, Mitsufumi; Iwasawa, Haruo;
 Yamamoto, Masafumi; Kajita, Toru (JSR Co., Ltd., Japan). Jpn. Kokai
 Tokkyo Koho JP 11242335 A2 **19990907** Heisei, 20 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-60381 19980226.

GI



AB The title resin compn. contains a resin insol. or slightly sol. in
 alkali having a repeating unit I (R1-6 = H, C1-6 straight-chain or
 branched alkyl, 5- to 8-membered cyclic alkyl, R1 and R2 and R3 and
 R4 may link each other to form a 5- to 8-membered cyclic alkyl; n =
 0-3) and a radiation-sensitive **acid-generator**.
 The compn. shows high storage stability, transparency toward
 radiation, and developability and provides a high resolu. pattern
 with good dry etch resistance and profile.

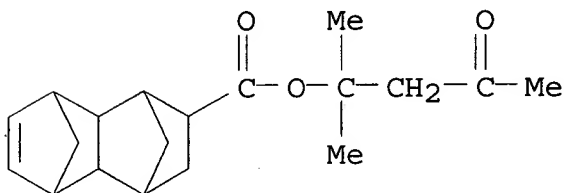
IT **242131-68-6P**
 (radiation-sensitive **resist** compn. contg. acid
 generator and polymer with norbornene group)

RN 242131-68-6 HCA
 CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethyl-3-oxobutyl ester, polymer with 6-(ethenyloxy)hexyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 238069-99-3

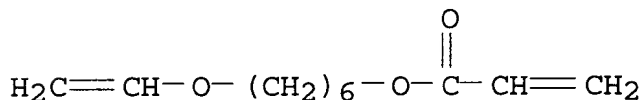
CMF C19 H26 O3



CM 2

CRN 91966-03-9

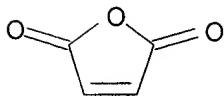
CMF C11 H18 O3



CM 3

CRN 108-31-6

CMF C4 H2 O3



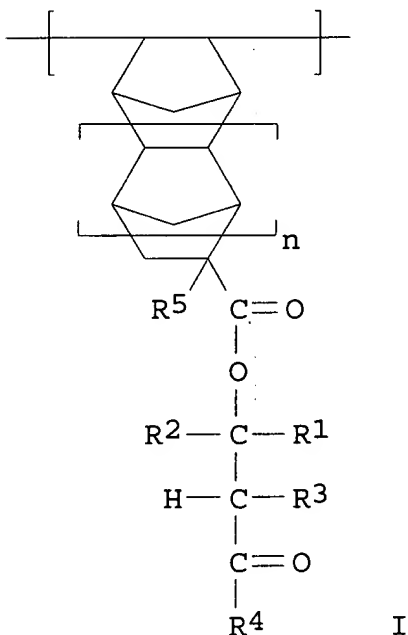
IC ICM G03F007-038
 ICS C08F032-00; C08L045-00; G03F007-004; H01L021-027; C09D145-00
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38
 ST radiation **resist** norbornene group polymer; acid generator
 chem amplification **resist**
 IT **Resists**
 (radiation-sensitive, chem. amplification; radiation-sensitive **resist** compn. contg. acid generator and polymer with norbornene group)

IT 238070-00-3P **242131-68-6P** 242131-70-0P 242131-72-2P
 242131-73-3P 242131-74-4P
 (radiation-sensitive **resist** compn. contg. acid
 generator and polymer with norbornene group)

=> d l35 1-16 cbib abs hitstr hitind

L35 ANSWER 1 OF 16 HCA COPYRIGHT 2002 ACS
 131:221220 Radiation-sensitive resin composition useful as chemically
 amplified **resist**. Suwa, Mitsufumi; Iwasawa, Haruo;
 Yamamoto, Masafumi; Kajita, Toru (JSR Co., Ltd., Japan). Jpn. Kokai
 Tokkyo Koho JP 11242335 A2 **19990907** Heisei, 20 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-60381 19980226.

GI



AB The title resin compn. contains a resin insol. or slightly sol. in alkali having a repeating unit I (R1-6 = H, C1-6 straight-chain or branched alkyl, 5- to 8-membered cyclic alkyl, R1 and R2 and R3 and R4 may link each other to form a 5- to 8-membered cyclic alkyl; n = 0-3) and a radiation-sensitive acid-generator. The compn. shows high storage stability, transparency toward radiation, and developability and provides a high resoln. pattern with good dry etch resistance and profile.

IT **242131-68-6P**
 (radiation-sensitive **resist** compn. contg. acid
 generator and polymer with norbornene group)

RN 242131-68-6 HCA

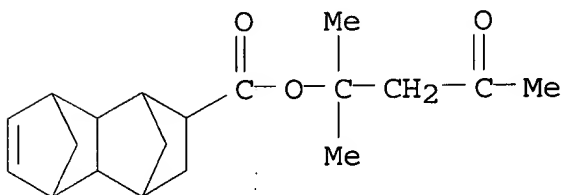
↓↓↓ (Structurally pretty
 junky from here on)

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethyl-3-oxobutyl ester, polymer with 6-(ethenyloxy)hexyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 238069-99-3

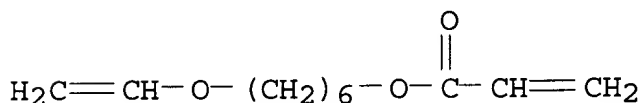
CMF C19 H26 O3



CM 2

CRN 91966-03-9

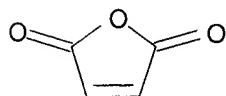
CMF C11 H18 O3



CM 3

CRN 108-31-6

CMF C4 H2 O3



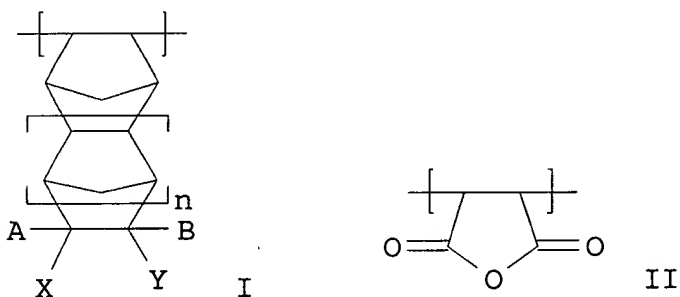
IC ICM G03F007-038
ICS C08F032-00; C08L045-00; G03F007-004; H01L021-027; C09D145-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST radiation **resist** norbornene group polymer; acid generator
chem amplification **resist**
IT **Resists**
(radiation-sensitive, chem. amplification; radiation-sensitive **resist** compn. contg. acid generator and polymer with norbornene group)
IT 238070-00-3P **242131-68-6P** 242131-70-0P 242131-72-2P

242131-73-3P 242131-74-4P
 (radiation-sensitive **resist** compn. contg. acid
 generator and polymer with norbornene group)

L35 ANSWER 2 OF 16 HCA COPYRIGHT 2002 ACS

131:108922 Radiation-sensitive resin composition. Kajita, Toru; Suwa, Mitsuhiro; Iwasawa, Haruo; Yamamoto, Masafumi (JSR Corporation, Japan). Eur. Pat. Appl. EP 930541 A1 **19990721**, 49 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-100718 19990115. PRIORITY: JP 1998-18290 19980116; JP 1998-18291 19980116; JP 1998-270685 19980125.

GI



AB A radiation-sensitive resin compn. useful as a chem. amplified **resist** comprises (A) a polymer contg. (a) a recurring unit of the formula I (A, B = H or an acid-decomposable org. group having ≥ 20 C atoms which dissects. in the presence of an acid and produces an acidic functional group provided that either one of A and B is the acid-decomposable org. group; X, Y = H or alkyl having 1-4 C atoms; n = 0 or 1) or a recurring unit of the formula I and a recurring unit of the formula II and (b) a recurring unit which is derived from a monomer having at least two polymerizable carbon-carbon double bonds by cleavage of the carbon-carbon double bonds, wherein the monomer has, in addn. to said at least two polymerizable carbon-carbon double bonds, at least one acid-decomposable divalent group of the formula $-\text{CO}_2\text{C}(\text{R}_1)(\text{R}_2)-$ or $-\text{OCOC}(\text{R}_3)(\text{R}_4)-$ (R_1-4 = alkyl having 1-5 C atoms), said at least two polymerizable carbon-carbon double bonds being linked via the acid-decomposable divalent group and (B) a photoacid generator.

IT **231296-14-3P 231296-17-6P 231296-19-8P**
231296-23-4P 231296-25-6P 231296-31-4P
231296-34-7P

(prepn. and use in chem. amplified **photoresists**)

RN 231296-14-3 HCA

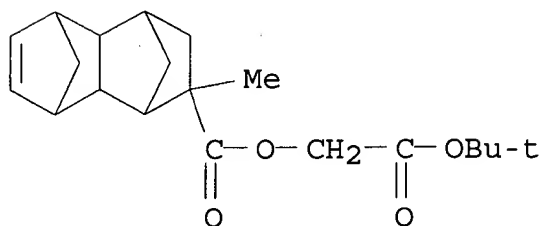
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-, 2-(1,1-dimethylethoxy)-2-oxoethyl ester, polymer with 2,5-furandione, 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-

dimethanonaphthalen-2-ol and 1,1,4,4-tetramethyl-1,4-butanediyl
di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 231296-10-9

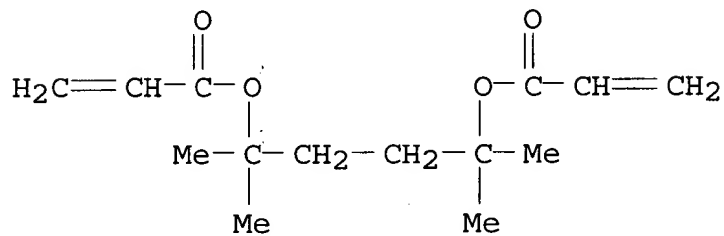
CMF C20 H28 O4



CM 2

CRN 188837-15-2

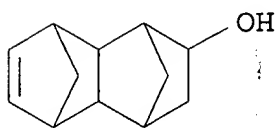
CMF C14 H22 O4



CM 3

CRN 7388-87-6

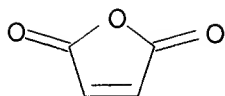
CMF C12 H16 O



CM 4

CRN 108-31-6

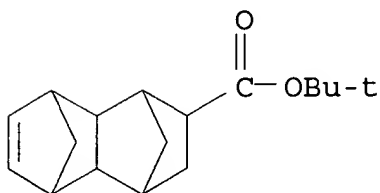
CMF C4 H2 O3



RN 231296-17-6 HCA
 CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethylethyl ester, polymer with 2,5-furandione and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

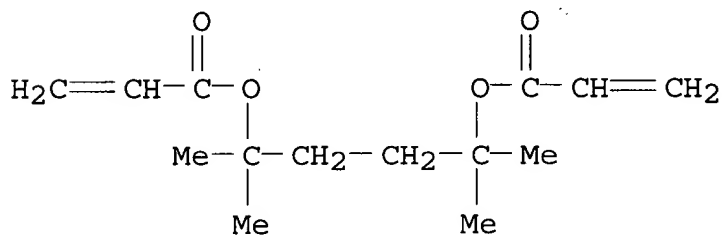
CM 1

CRN 195057-79-5
 CMF C17 H24 O2



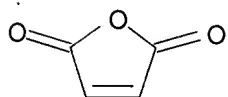
CM 2

CRN 188837-15-2
 CMF C14 H22 O4



CM 3

CRN 108-31-6
 CMF C4 H2 O3



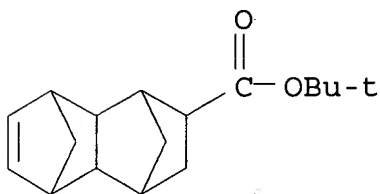
RN 231296-19-8 HCA

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethylethyl ester, polymer with 2-hydroxypropyl 2-propenoate and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 195057-79-5

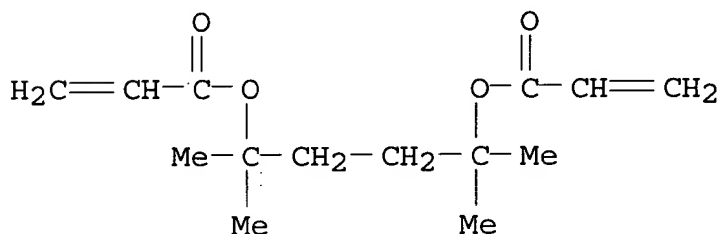
CMF C17 H24 O2



CM 2

CRN 188837-15-2

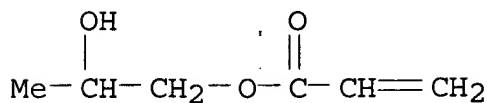
CMF C14 H22 O4



CM 3

CRN 999-61-1

CMF C6 H10 O3

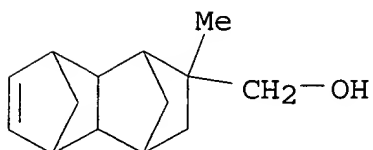


RN 231296-23-4 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene-2-methanol and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

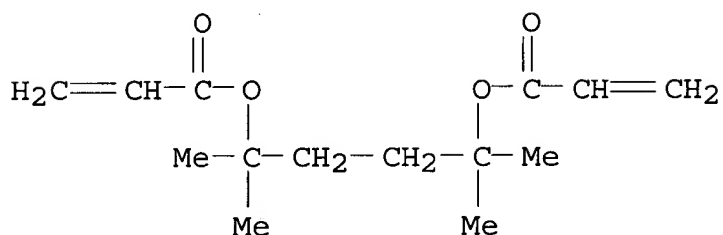
CM 1

CRN 231296-21-2
CMF C14 H20 O



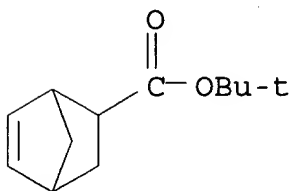
CM 2

CRN 188837-15-2
CMF C14 H22 O4



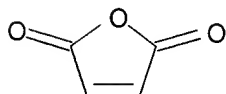
CM 3

CRN 154970-45-3
CMF C12 H18 O2



CM 4

CRN 108-31-6
CMF C4 H2 O3



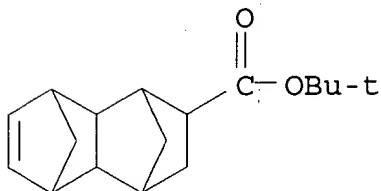
RN 231296-25-6 HCA
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-

octahydro-, 1,1-dimethylethyl ester, polymer with 2-(acetyloxy)ethyl
2-methyl-2-propenoate, 2,5-furandione and 1,1,4,4-tetramethyl-1,4-
butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 195057-79-5

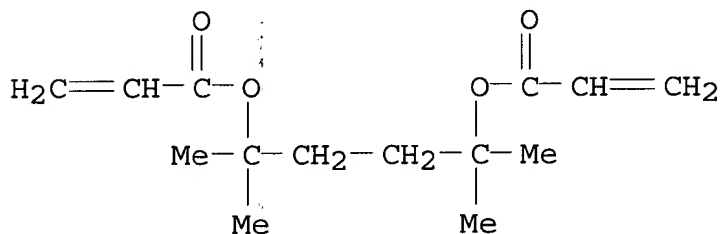
CMF C17 H24 O2



CM 2

CRN 188837-15-2

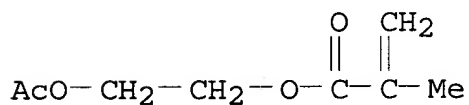
CMF C14 H22 O4



CM 3

CRN 20166-49-8

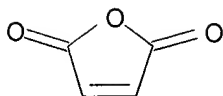
CMF C8 H12 O4



CM 4

CRN 108-31-6

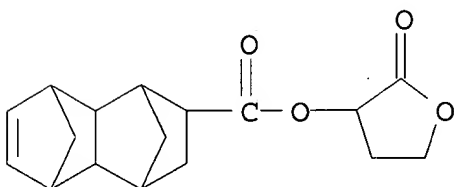
CMF C4 H2 O3



RN 231296-31-4 HCA
 CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, tetrahydro-2-oxo-3-furanyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

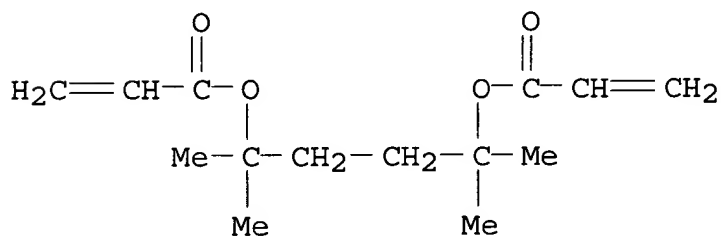
CM 1

CRN 231296-29-0
 CMF C17, H20 O4



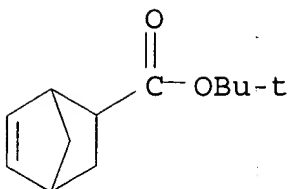
CM 2

CRN 188837-15-2
 CMF C14 H22 O4



CM 3

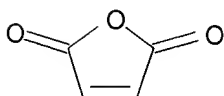
CRN 154970-45-3
 CMF C12 H18 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



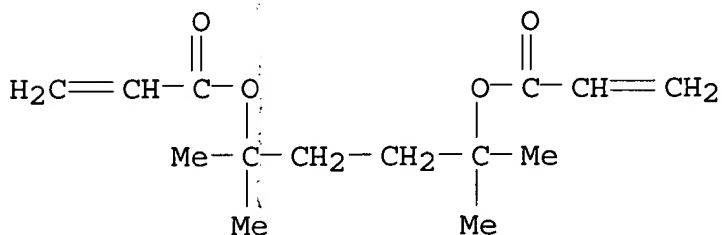
RN 231296-34-7 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene-2-methanol and 1,1,4,4-tetramethyl-1,4-butanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 188837-15-2

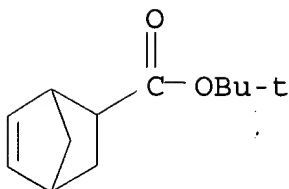
CMF C14 H22 O4



CM 2

CRN 154970-45-3

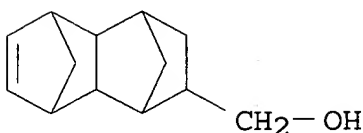
CMF C12 H18 O2



CM 3

CRN 7329-04-6

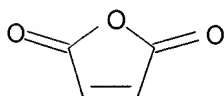
CMF C13 H18 O



CM 4

CRN 108-31-6

CMF C4 H2 O3



IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST chem amplified **resist** norbornene copolymer
IT **Photoresists**
(chem. amplified; contg. norbornene copolymers)
IT 102-60-3, N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine
1116-76-3, Trioctylamine 2842-38-8, N-Cyclohexylethanolamine
3033-62-3, Bis(2-dimethylaminoethyl) ether 66003-78-9,
Triphenylsulfonium trifluoromethanesulfonate 144317-44-2,
Triphenylsulfonium nonafluorobutanesulfonate 194999-85-4,
Bis(4-tert-butylphenyl)iodonium nonafluorobutanesulfonate
204315-69-5 209482-18-8 231296-54-1
(chem. amplified **photoresists** contg. norbornene copolymers and)
IT 231299-53-9P
(prepn. and reaction in prep. alicyclic compd. for chem. amplified **photoresists** contg. norbornene copolymers)
IT 3439-94-9P 7329-04-6P 7388-87-6P 41596-02-5P 46382-54-1P

58732-15-3P 168898-16-6P 195057-79-5P 231296-10-9P
231296-21-2P 231296-29-0P
(prepn. and reaction in prepg. norbornene copolymers for chem.
amplified **photoresists**)

IT 231296-14-3P 231296-17-6P 231296-19-8P
231296-23-4P 231296-25-6P 231296-31-4P
231296-34-7P
(prepn. and use in chem. amplified **photoresists**)

IT 231299-51-7P
(prepn. and use in chem. amplified **photoresists** contg.
norbornene copolymers)

IT 122752-67-4P 169228-97-1P 213901-06-5P 231296-37-0P
231296-39-2P 231296-41-6P 231296-42-7P 231296-44-9P
231296-48-3P 231296-50-7P 231296-52-9P
(prepn. and use in chem. amplified **photoresists** contg.
norbornene copolymers)

IT 97-64-3, Ethyl 2-hydroxypropionate 108-94-1, Cyclohexanone, uses
110-43-0, 2-Heptanone 1320-67-8, Propylene glycol monomethyl ether
(solvent for chem. amplified **photoresists** contg.
norbornene copolymers)

L35 ANSWER 3 OF 16 HCA COPYRIGHT 2002 ACS
130:274112 Chemically amplified positively working **photoresist**
composition using polymer having hindered piperidine structure.
Kamitani, Yasunori; Takemoto, Kazuki; Fujishima, Hiroaki (Sumitomo
Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11084660 A2
19990326 Heisei, 7 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1997-248591 19970912.

AB The compn. comprises (A) a resin contg. a polymer unit with a
hindered piperidine skeleton, whose alkali insoly. or low soly. is
changed to high alkali soly. by an acid, and (B) an acid-generating
agent. The compn. provides improved profile images with high
resolving power without redn. of sensitivity and is suitable for
semiconductor device fabrication.

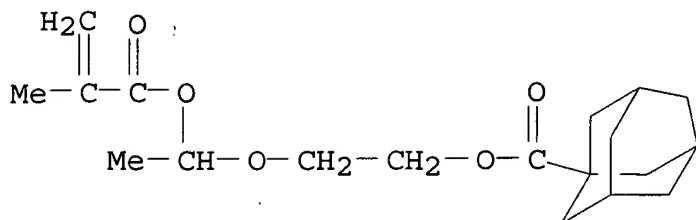
IT 222173-26-4P
(chem. amplified pos. working **photoresist** compn. using
polymer having hindered piperidine structure)

RN 222173-26-4 HCA
CN Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, 2-[1-[(2-methyl-1-oxo-
2-propenyl)oxy]ethoxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-
ene, 2,5-furandione and 1,2,2,6,6-pentamethyl-4-piperidinyl
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 181894-81-5
CMF C19 H28 O5

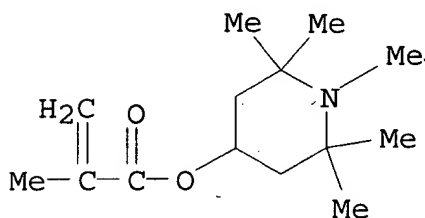
3/26/99



CM 2

CRN 68548-08-3

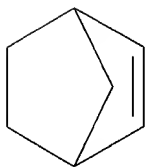
CMF C14 H25 N O2



CM 3

CRN 498-66-8

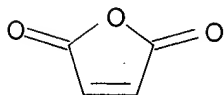
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

Section cross-reference(s): 76

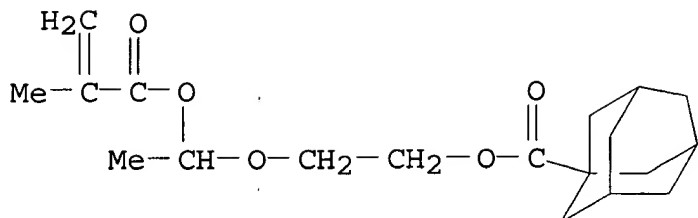
- ST chem amplified pos working **photoresist**; hindered piperidine structure polymer **photoresist**; acid generating agent chem amplified **photoresist**; semiconductor device fabrication pos working **photoresist**
- IT Positive **photoresists**
(chem. amplified pos. working **photoresist** compn. using polymer having hindered piperidine structure)
- IT Semiconductor device fabrication
(chem. amplified pos. working **photoresist** compn. using polymer having hindered piperidine structure for)
- IT **222173-26-4P**
(chem. amplified pos. working **photoresist** compn. using polymer having hindered piperidine structure)
- IT 181894-81-5P
(monomer; for chem. amplified pos. working **photoresist** compn. using polymer having hindered piperidine structure)
- IT 764-48-7, Ethylene glycol monovinyl ether 2094-72-6, 1-Adamantanecarbonyl chloride
(raw material for monomer; for chem. amplified pos. working **photoresist** compn. using polymer having hindered piperidine structure)
- L35 ANSWER 4 OF 16 HCA COPYRIGHT 2002 ACS
- 130:215884 Chemically amplified positive-working **photoresist** composition containing hindered piperidine as quencher. Kamitani, Yasunori; Takemoto, Kazuki (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11052575 A2 19990226 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-208864 19970804.
- AB The title **photoresist** compn. contains a resin insol. or slightly sol. in alkali that becomes alkali-sol. by the action of acid, an acid generator, and a hindered amine compd. having a hindered piperidine skeleton. The compn. shows high photosensitivity, developability, and coatability and provides high resolu. patterns with good profile.
- IT **220956-62-7P**, Norbornene-succinic anhydride-1-adamantylcarbonyloxyethoxy-1-methylethyl methacrylate copolymer
(chem. amplification-type **photoresist** contg. resin, acid generator, and hindered piperidine compd.)
- RN 220956-62-7 HCA
- CN Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, 2-[1-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and dihydro-2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 181894-81-5

CMF C19 H28 O5

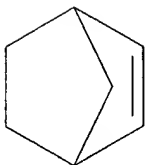
2/26/99



CM 2

CRN 498-66-8

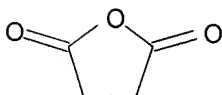
CMF C7 H10



CM 3

CRN 108-30-5

CMF C4 H4 O3



- IC ICM G03F007-039
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
- ST **photoresist** polyvinylphenol; hindered piperidine quencher
chem amplification **photoresist**; acid generator chem
amplification **photoresist**
- IT **Photoresists**
(chem. amplification-type **photoresist** contg. resin,
acid generator, and hindered piperidine compd.)
- IT 63843-89-0, Tinuvin 144 68548-08-3, ADK Stab LA 82 73754-27-5,
Sanol LS 2626 107119-91-5, ADK Stab LA 62 115055-30-6, ADK Stab
LA 63 147783-69-5, Sanduvor PR 31
(chem. amplification-type **photoresist** contg. resin,
acid generator, and hindered piperidine compd.)
- IT 109-92-2DP, Ethyl vinyl ether, ethers with poly(vinylphenol)
24979-70-2DP, VP 15000, ethers with Et vinyl ether

220956-62-7P, Norbornene-succinic anhydride-1-adamantylcarbonyloxyethoxy-1-methylethyl methacrylate copolymer
(chem. amplification-type **photoresist** contg. resin, acid generator, and hindered piperidine compd.)

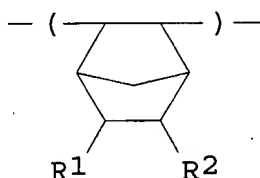
IT 29651-47-6, .alpha.-Methylolbenzoin tosylate 138529-81-4,
Bis(cyclohexylsulfonyl)diazomethane
(chem. amplification-type **photoresist** contg. resin, acid generator, and hindered piperidine compd.)

IT 41556-26-7, Sanol LS 765 91788-83-9, ADK Stab LA 52
(quencher; chem. amplification-type **photoresist** contg. resin, acid generator, and hindered piperidine compd.)

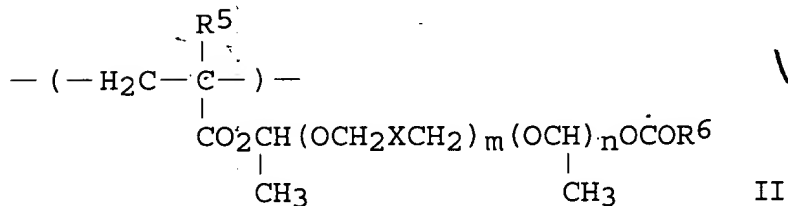
L35 ANSWER 5 OF 16 HCA COPYRIGHT 2002 ACS

130:131782 Copolymer for chemically amplified positive **resist** composition. Fujishima, Hiroaki; Kamitani, Yasunori; Miya, Yoshiko (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11002903 A2 **19990106** Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-278570 19971013. PRIORITY: JP 1997-95656 19970414.

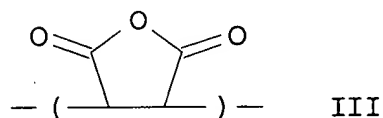
GI



(a)



(e)



AB The copolymer has repeating unit I (R1-2 = alkyl, OH, carboxylic acid anhydride with R1 and R2 together, etc.) II (R5 = H, Me; R6 = aliph. ring; X = single bond, C1-4 alkylene or cycloalkylene; m and n = 0, 1), and III. The chem. amplified pos. **resist** compn. contains the copolymer and an acid generating agent. The copolymer provides the **resist** of high sensitivity, high resolu., and excellent adhesion towards a substrate.

IT 219774-64-8P 219774-66-0P 219774-68-2P

219774-69-3P 219774-71-7P

(copolymer for chem. amplified pos. **resist** compn.)

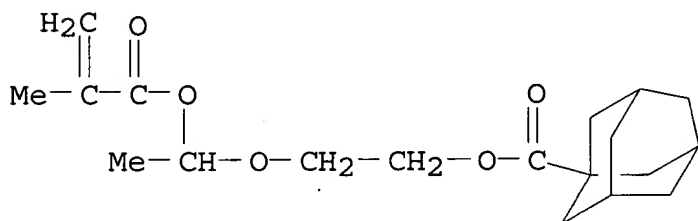
RN 219774-64-8 HCA

CN Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, 2-[1-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 181894-81-5

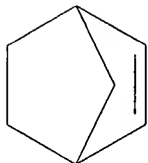
CMF C19 H28 O5



CM 2

CRN 498-66-8

CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



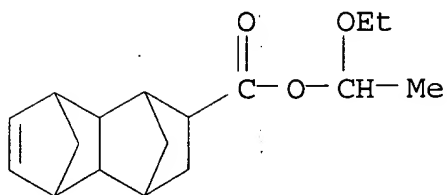
RN 219774-66-0 HCA

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1-ethoxyethyl ester, polymer with 2,5-furandione and 2-[1-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl tricyclo[3.3.1.1^{3,7}]decane-1-carboxylate (9CI) (CA INDEX NAME)

CM 1

CRN 219774-65-9

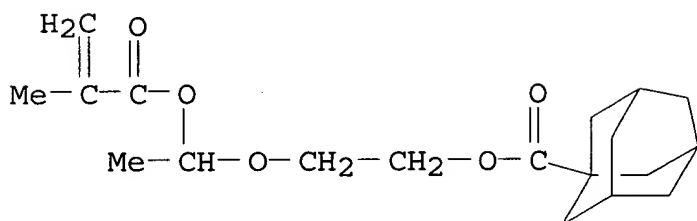
CMF C17 H24 O3



CM 2

CRN 181894-81-5

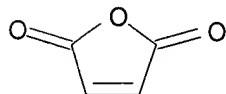
CMF C19 H28 O5



CM 3

CRN 108-31-6

CMF C4 H2 O3



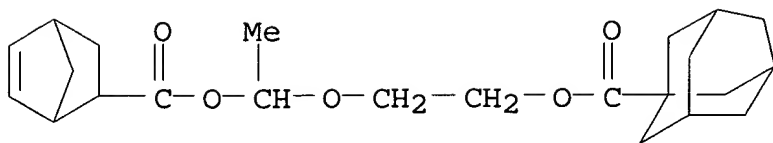
RN 219774-68-2 HCA

CN Tricyclo[3.3.1.1.3,7]decane-1-carboxylic acid, 2-[1-
 [(bicyclo[2.2.1]hept-5-en-2-ylcarbonyl)oxy]ethoxy]ethyl ester,
 polymer with 2,5-furandione and 2-[1-[(2-methyl-1-oxo-2-
 propenyl)oxy]ethoxy]ethyl tricyclo[3.3.1.1.3,7]decane-1-carboxylate
 (9CI) (CA INDEX NAME)

CM 1

CRN 219774-67-1

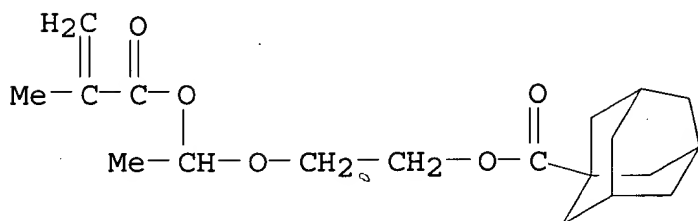
CMF C23 H32 O5



CM 2

CRN 181894-81-5

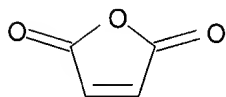
CMF C19 H28 O5



CM 3

CRN 108-31-6

CMF C4 H2 O3



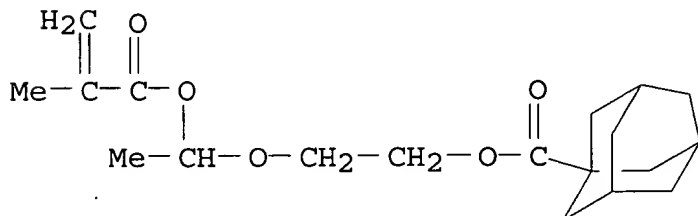
RN 219774-69-3 HCA

CN Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, 2-[1-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

CM 1

CRN 181894-81-5

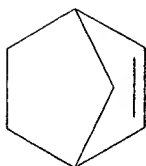
CMF C19 H28 O5



CM 2

CRN 498-66-8

CMF C7 H10



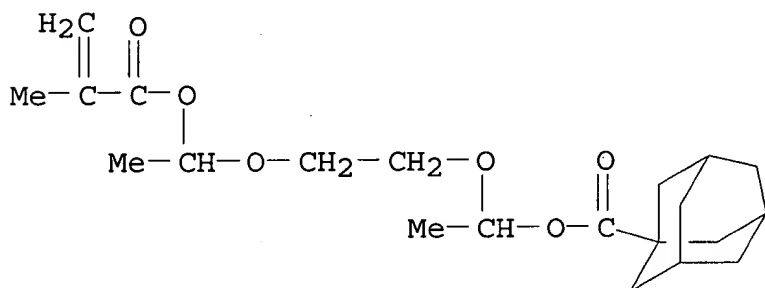
RN 219774-71-7 HCA

CN Tricyclo[3.3.1.1^{3,7}]decane-1-carboxylic acid, 1-[2-[1-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethoxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 219774-70-6

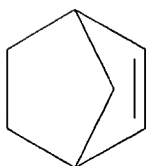
CMF C21 H32 O6



CM 2

CRN 498-66-8

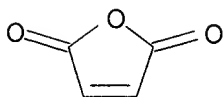
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



- IC ICM G03F007-039
ICS C08F222-06; C08F222-14; C08F232-00; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 76
- ST copolymer chem amplified pos **resist** compn
- IT Positive **photoresists**
(chem. amplified; copolymer for chem. amplified pos. **resist** compn.)
- IT Polymers, preparation
(co-; copolymer for chem. amplified pos. **resist** compn.)
- IT 181894-81-5P 219774-65-9P 219774-67-1P 219774-70-6P
(copolymer for chem. amplified pos. **resist** compn.)
- IT 219774-64-8P 219774-66-0P 219774-68-2P
219774-69-3P 219774-71-7P
(copolymer for chem. amplified pos. **resist** compn.)
- IT 77-73-6 79-10-7, 2-Propenoic acid, reactions 79-41-4, reactions 109-92-2 120-74-1, 5-Norbornene-2-carboxylic acid 542-92-7, Cyclopentadiene, reactions 764-48-7 828-51-3, 1-Adamantane carboxylic acid 2094-72-6, 1-Adamantanecarbonyl chloride 219774-72-8
(copolymer for chem. amplified pos. **resist** compn.)
- L35 ANSWER 6 OF 16 HCA COPYRIGHT 2002 ACS
- 128:116341 Ultraviolet light-curable resin compositions and their use in heat-resistant coatings on color filters. Tanikuchi, Nobuo; Yokoshima, Minoru (Nippon Kayaku Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09325210 A2 19971216 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-159280 19960531.
- AB The compns. contain (A) acid group-contg. resins, (B) reactive monomers, (C) photopolymn. initiators, and (D) allylnadimides. Thus, coating a soln. contg. 2-hydroxy-3-phenyloxypropyl acrylate-methacrylic acid-o-phenylphenyloxyethyl acrylate copolymer 200, Kayarad DPHA 50, Lucirin TPO 5, and 4,4'-diphenylmethanebisallylnadimide 20 parts in 500 parts propylene glycol Me ether acetate on a glass plate, drying, irradiating through a **photomask** with UV light, and developing with 1% aq. CaCO₃ gave a pattern layer with good heat resistance and adhesion strength.
- IT 201489-85-2P 201489-86-3P
(UV-curable resin compns. for heat-resistant coatings on color filters)
- RN 201489-85-2 HCA
- CN 2-Propenoic acid, 2-methyl-, polymer with 2-([1,1'-biphenyl]-2-yloxy)ethyl 2-propenoate, 2-hydroxy-3-phenoxypropyl 2-propenoate,

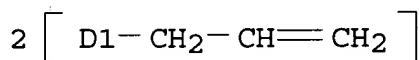
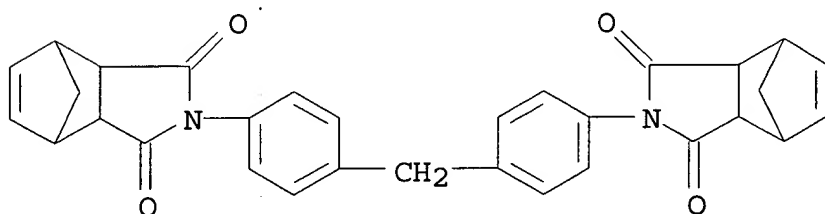
[2(3'aR*,4'R*,7'S*,7'aS*),3a.alpha.,4.alpha.,7.alpha.,7a.alpha.]-
2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-
4,7-methano-1H-isoindole-1,3(2H)-dione] and 2,2'-
[oxybis(methylene)]bis[2-(hydroxymethyl)-1,3-propanediol]
2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37' H34 N2 O4

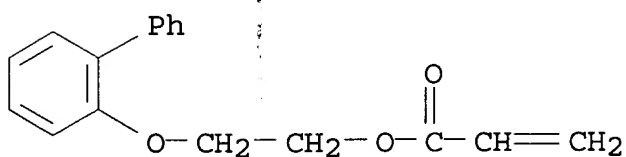
CCI IDS



CM 2

CRN 91442-24-9

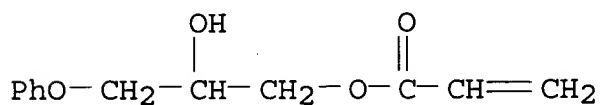
CMF C17 H16 O3



CM 3

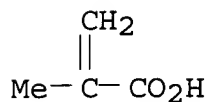
CRN 16969-10-1

CMF C12 H14 O4



CM 4

CRN 79-41-4
CMF C4 H6 O2

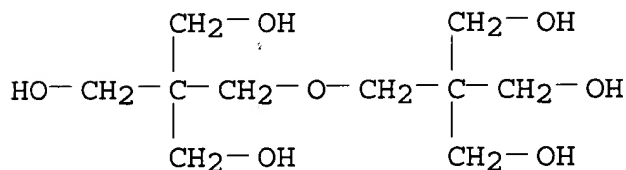


CM 5

CRN 77641-99-7
CMF C10 H22 O7 . x C3 H4 O2

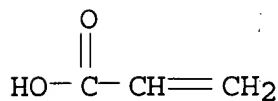
CM 6

CRN 126-58-9
CMF C10 H22 O7



CM 7

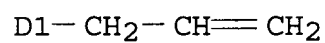
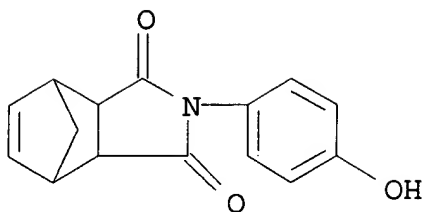
CRN 79-10-7
CMF C3 H4 O2



RN 201489-86-3 HCA
CN 2-Propenoic acid, 2-methyl-, polymer with 2-([1,1'-biphenyl]-2-yloxy)ethyl 2-propenoate, 2-hydroxy-3-phenoxypropyl 2-propenoate, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)-1,3-propanediol] 2-propenoate and (3a.alpha.,4.alpha.,7.alpha.,7a.alpha.)-3a,4,7,7a-tetrahydro-2-(4-hydroxyphenyl)-4(or 5)-(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

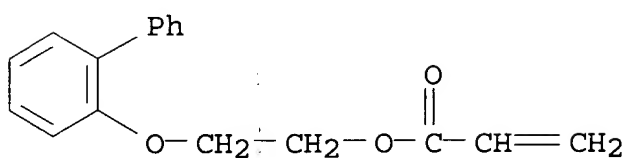
CRN 121523-72-6
CMF C18 H17 N O3
CCI IDS



CM 2

CRN 91442-24-9

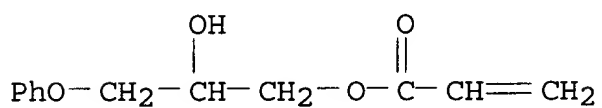
CMF C17 H16 O3



CM 3

CRN 16969-10-1

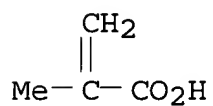
CMF C12 H14 O4



CM 4

CRN 79-41-4

CMF C4 H6 O2



CM 5

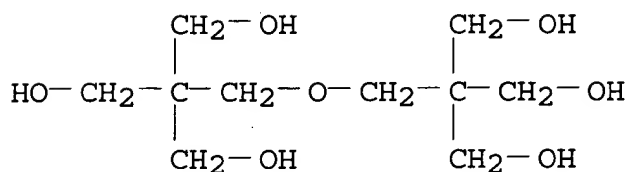
CRN 77641-99-7

CMF C10 H22 O7 . x C3 H4 O2

CM 6

CRN 126-58-9

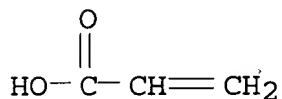
CMF C10 H22 O7



CM 7

CRN 79-10-7

CMF C3 H4 O2

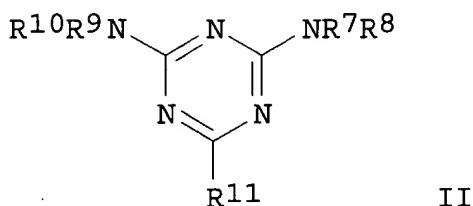
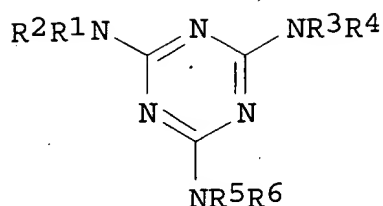


IC ICM G02B005-20
 ICS C08F002-50; C08F291-06; C08G073-10; C08K005-3417; C08L101-02;
 C09D004-00; G02F001-1335; G03F007-027; G03F007-033
 CC 42-7 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 74
 IT Optical filters
Photoresists
 (UV-curable resin compns. for heat-resistant coatings on color filters)
 IT **201489-85-2P 201489-86-3P**
 (UV-curable resin compns. for heat-resistant coatings on color filters)

L35 ANSWER 7 OF 16 HCA COPYRIGHT 2002 ACS

128:76356 Radiation-sensitive **resist** compositions and their
 cured products for color filters. Taniguchi, Nobuo; Yokoshima,
 Minoru (Nippon Kayaku Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 09316346 A2 **19971209** Heisei, 7 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 1996-159279 19960531.

GI



AB Title compn. comprises (A) OH- and carboxylic-contg. copolymer, (B) allylnadimide compd., (C) melamines I or guanamine II (R1-R10 = H, CH2OR12 or (CH2)4OR12; R12 = H, C1-6 alkyl; R11 = alkyl or substituted phenyl), (D) photooxidant generator, and (E) diluent. The radiation-sensitive compns. and their cured products have good developing properties, heat resistance, adhesion and hardness, and are esp. useful as color filters in liq. crystal devices. Thus, o-phenylphenyloxyethyl acrylate-methacrylic acid-2-hydroxy-3-phenyloxypropyl acrylate copolymer 200, 4,4'-bis(allylnadimido)diphenylmethane 30, hexa(methoxymethyl)melamine 10, 2-[(5'-methyl-2'-furyl)vinylene]-4,6-bis(trichloromethyl)-s-triazine 10 and propylene glycol monomethyl ether acetate 500 parts were mixed, spin coated on a glass panel at thickness 1-3 .mu.m, dried, covered with a neg. film, UV-irradiated, and developed with 1% Na2CO3 aq. soln. to give a test specimen showing good developability and adhesion, color difference value (at 250.degree. for 1 h) 0.3 and pencil hardness 6H.

IT 200138-29-0P 200138-30-3P 200443-83-0P
(radiation-sensitive **resist** compns. for color filter with good developing properties, heat resistance, adhesion and hardness)

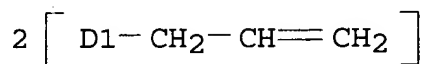
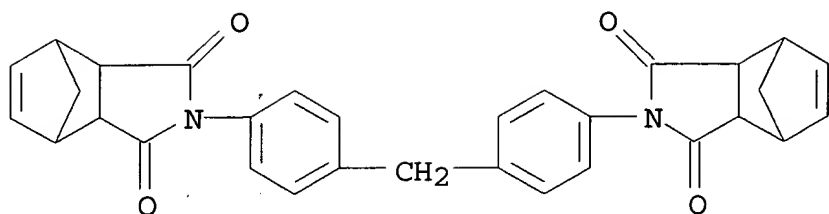
RN 200138-29-0 HCA
CN 2-Propenoic acid, 2-methyl-, polymer with 2-([1,1'-biphenyl]-2-yloxy)ethyl 2-propenoate, N,N,N',N',N'',N''-hexakis(methoxymethyl)-1,3,5-triazine-2,4,6-triamine, 2-hydroxy-3-phenoxypropyl 2-propenoate and 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI)
(CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

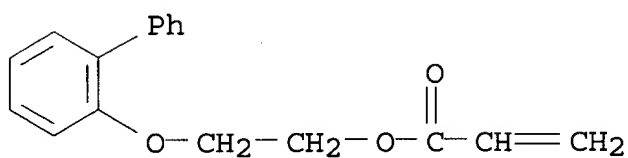
CCI IDS



CM 2

CRN 91442-24-9

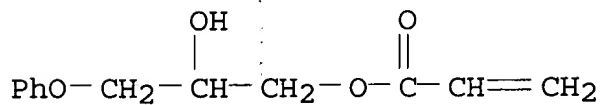
CMF C17 H16 O3



CM 3

CRN 16969-10-1

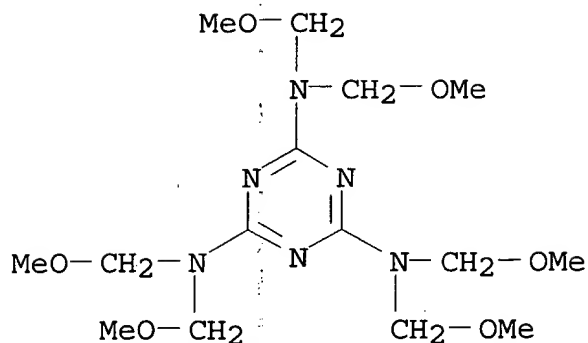
CMF C12 H14 O4



CM 4

CRN 3089-11-0

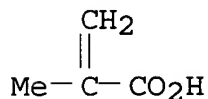
CMF C15 H30 N6 O6



CM 5

CRN 79-41-4

CMF C4 H6 O2



RN 200138-30-3 HCA

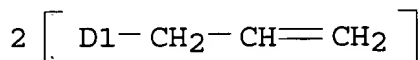
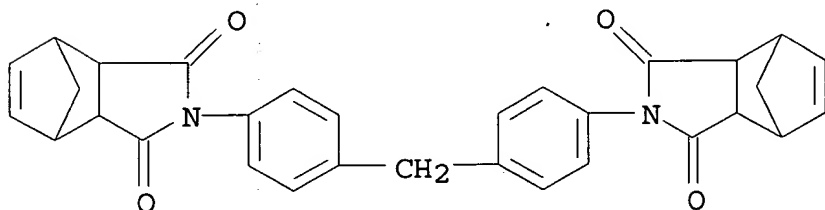
CN 2-Propenoic acid, 2-methyl-, polymer with 2-([1,1'-biphenyl]-2-yloxy)ethyl 2-propenoate, N,N,N',N',N'',N''-hexakis(butoxymethyl)-1,3,5-triazine-2,4,6-triamine, 2-hydroxy-3-phenoxypropyl 2-propenoate and 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI)
(CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

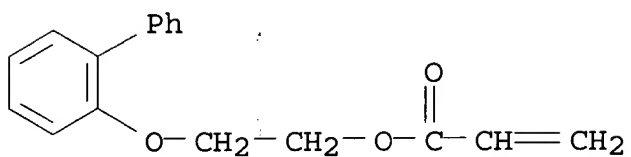
CCI IDS



CM 2

CRN 91442-24-9

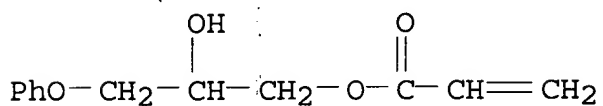
CMF C17 H16 O3



CM 3

CRN 16969-10-1

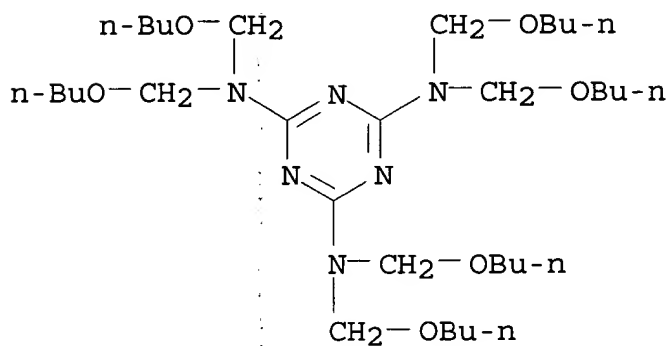
CMF C12 H14 O4



CM 4

CRN 7517-78-4

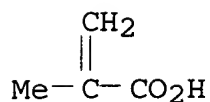
CMF C33 H66 N6 O6



CM 5

CRN 79-41-4

CMF C4 H6 O2



RN 200443-83-0 HCA

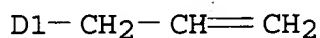
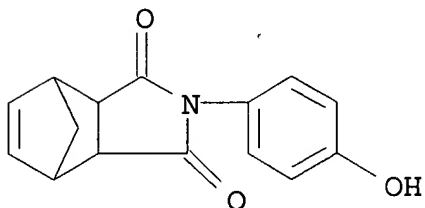
CN 2-Propenoic acid, 2-methyl-, polymer with 2-([1,1'-biphenyl]-2-yloxy)ethyl 2-propenoate, N,N,N',N',N'',N''-hexakis(butoxymethyl)-1,3,5-triazine-2,4,6-triamine, 2-hydroxy-3-phenoxypropyl 2-propenoate and (3a.alpha.,4.alpha.,7.alpha.,7a.alpha.)-3a,4,7,7a-tetrahydro-2-(4-hydroxyphenyl)-4(or 5)-(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

CRN 121523-72-6

CMF C18 H17 N O3

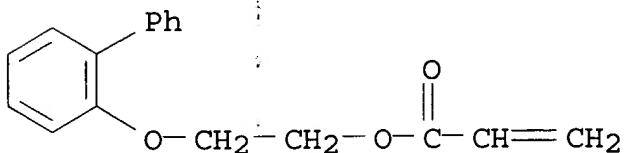
CCI IDS



CM 2

CRN 91442-24-9

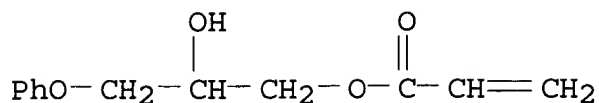
CMF C17 H16 O3



CM 3

CRN 16969-10-1

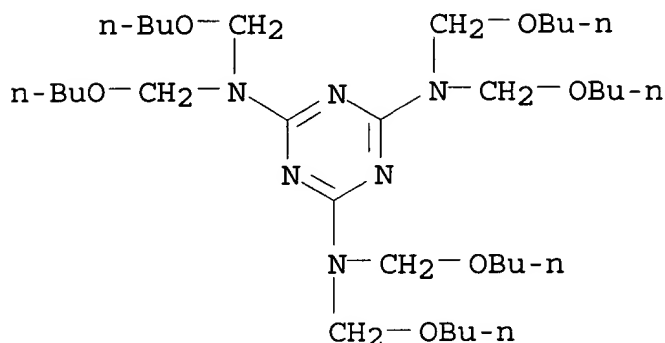
CMF C12 H14 O4



CM 4

CRN 7517-78-4

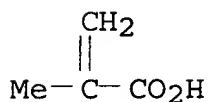
CMF C33 H66 N6 O6



CM 5

CRN 79-41-4

CMF C4 H6 O2



- IC ICM C08L101-02
ICS C08F002-50; C08F291-06; C08G073-10; C08K005-3417; C08K005-3477;
C09D004-00; G02B005-20; G03F007-004; G03F007-038
- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 74
- ST radiation sensitive resin **resist** color filter;
allylnadimide radiation sensitive resin **resist**; melamine
radiation sensitive resin **resist**; hydroxy copolymer
radiation sensitive **resist**; carboxylic copolymer radiation
sensitive **resist**
- IT Polyimides, uses
(acrylic; radiation-sensitive **resist** compns. for color
filter with good developing properties, heat resistance, adhesion
and hardness)
- IT Liquid crystal displays
Optical filters
(radiation-sensitive **resist** compns. with good

developing properties, heat resistance, adhesion and hardness for)

IT **Resists**

(radiation-sensitive; radiation-sensitive **resist** compns. for color filter with good developing properties, heat resistance, adhesion and hardness)

IT **200138-29-0P 200138-30-3P 200443-83-0P**

(radiation-sensitive **resist** compns. for color filter with good developing properties, heat resistance, adhesion and hardness)

L35 ANSWER 8 OF 16 HCA COPYRIGHT 2002 ACS

126:239407 Pigment-dispersed thermosetting resin compositions, their manufacture and use for color filters. Taniguchi, Masaharu; Niwa, Katsuhiro; Goto, Tetsuya (Toray Industries, Japan). Jpn. Kokai Tokkyo Koho JP 09040886 A2 19970210 Heisei, 8 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-191671 19950727.

AB The compns. giving color filters with good heat, chem. and light resistance and contrast ratio comprises a polyimide derived from maleic anhydride and/or nadic anhydride and polyvalent amines and pigments. Heating 4,4'-diaminodiphenyl ether and maleic anhydride in NMP, 3-methyl-3-methoxybutanol, and .gamma.-butyrolactone gave a polyamic acid with viscosity 132 cP. Adding 24.75 g Pigment Green 7 and 3.75 g Pigment Yellow 83 to 145 g the polyamic acid soln., homogenizing with 90 g glass beads, filtering off the glass beads, coating on a glass plate, spin coating with a **photoresist**, covering with a **photomask**, subjecting to UV irradiation, etching, removing the **resist**, and heating 30 min at 60.degree. gave a colored polyimide film without pigment aggregation.

IT **188557-44-0**

(pigment-dispersed thermosetting resin compns. for color filters with good heat light chem. resistance and contrast ratio)

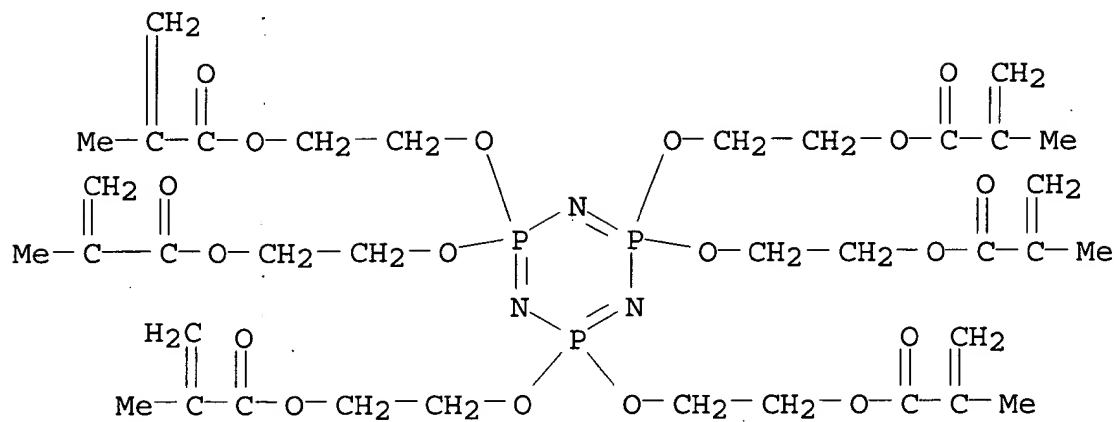
RN 188557-44-0 HCA

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with 2,5-furandione, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]-1,3,5,2,4,6-triazatriphosphorine, 4,4'-oxybis[benzenamine] and (3a.alpha.,4.alpha.,7.alpha.,7a.alpha.)-3a,4,7,7a-tetrahydro-4,7-methanoisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)

CM 1

CRN 92832-53-6

CMF C36 H54 N3 O18 P3

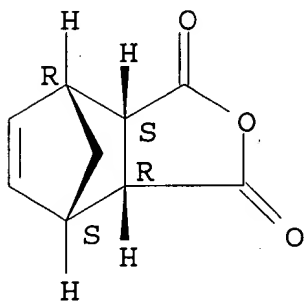


CM 2

CRN 129-64-6

CMF C9 H8 O3

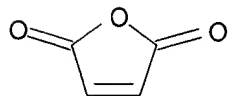
Relative stereochemistry.



CM 3

CRN 108-31-6

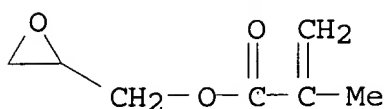
CMF C4 H2 O3



CM 4

CRN 106-91-2

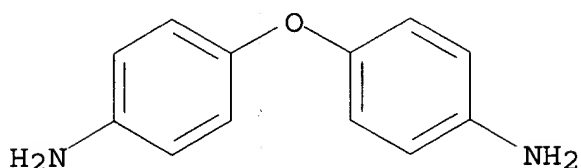
CMF C7 H10 O3



CM 5

CRN 101-80-4

CMF C12, H12 N2 O



IC ICM C09D004-00

ICS C08L079-08; G02B005-20; G03F007-037

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74

IT 35311-57-0, 4,4'-Diaminodiphenyl ether-maleic anhydride copolymer
 188557-43-9, 4,4'-Diaminodiphenyl ether-nadic anhydride copolymer
188557-44-0

(pigment-dispersed thermosetting resin compns. for color filters
 with good heat light chem. resistance and contrast ratio)

L35 ANSWER 9 OF 16 HCA COPYRIGHT 2002 ACS

125:234431 Crosslinkable compositions containing polymers with stressed
 cycloalkenyl groups and metathesis polymerization catalysts.

Muehlebach, Andreas; Hafner, Andreas; Van Der Schaaf, Paul Adriaan
 (Ciba-Geigy A.-G., Switz.). PCT Int. Appl. WO 9624629 A1

19960815, 122 pp. DESIGNATED STATES: W: AL, AM, AU, BB,
 BG, BR, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KP, KR, LK, LR, LT, LV,
 MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ,
 VN, AZ, BY, KG, KZ, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI,
 CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT,
 SE, SN, TD, TG. (German). CODEN: PIXXD2. APPLICATION: WO
 1996-EP344 19960129. PRIORITY: CH 1995-405 19950209.

AB The title compns. contain a metathesis polymn. catalyst [e.g.,
 (p-MeC6H4SO3)2RuX6 (X = MeCN, EtCN), (Me3SiCH2)3TaCl2, or
 (C6H11)3PRu(p-cumene)Cl2] and .gtoreq.1 polymer with stressed
 cycloalkenyl residues such as an esterification product of
 poly(4-hydroxystyrene) and 2-norbornene-5-carbonyl chloride or a
 polymer prepd. from 2-(2-norbornen-5-ylcarbonyloxy)ethyl
 methacrylate. The compns. are suitable for photochem. or thermal
 crosslinking, e.g., as **photoresists** and coatings on Si
 wafers or glass.

IT **181934-52-1**, Poly[2-(2-norbornen-5-ylcarbonyloxy)ethyl

methacrylate] 181934-53-2, Poly[2-(5-methyl-2-norbornen-5-ylcarbonyloxy)ethyl methacrylate]
(heat- and UV-curable coating compns. contg. metathesis polymn. catalysts and)

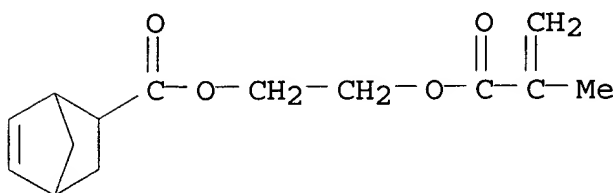
RN 181934-52-1 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 181934-51-0

CMF C14 H18 O4



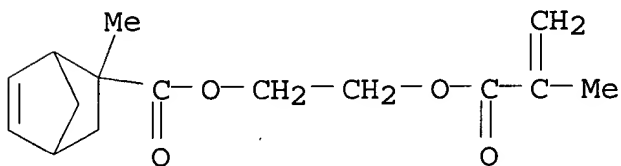
RN 181934-53-2 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methyl-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, homopolymer (9CI)
(CA INDEX NAME)

CM 1

CRN 57516-48-0

CMF C15 H20 O4



IC ICM C08G061-00

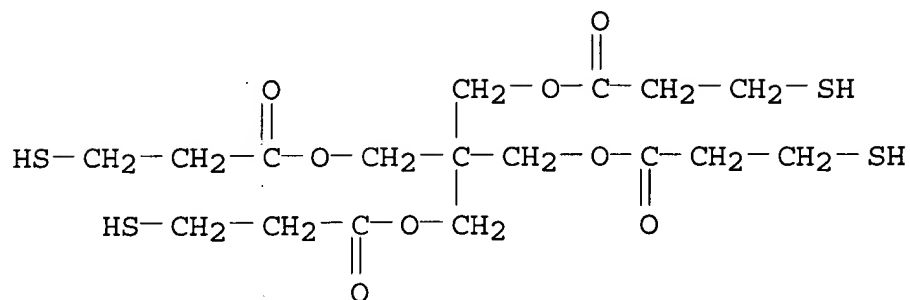
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 37

ST crosslinking metathesis catalyst cycloalkenyl deriv polymer; norbornene deriv polymer crosslinking metathesis catalyst; methacrylate norbornenylcarbonyloxyethyl polymer crosslinking catalyst; polyhydroxystyrene norbornenylcarboxylate ester crosslinking catalyst; photocrosslinking metathesis catalyst cycloalkenyl polymer; thermal crosslinking metathesis catalyst cycloalkenyl polymer; **photoresist** cycloalkenyl polymer crosslinking catalyst; **resist** photo cycloalkenyl polymer crosslinking catalyst; silicon wafer coating **photoresist**

IT **Resists**

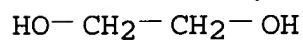
- (photo-, mixts. of metathesis crosslinking catalysts and polymers contg. stressed cycloalkenyl groups for)
- IT 120-74-1D, 2-Norbornene-5-carboxylic acid, esters with hydroxy group-contg. polymers 9002-89-5D, Poly(vinyl alcohol), esters with carboxylic acids contg. norbornenyl groups 24979-70-2D, Poly(p-hydroxystyrene), esters with carboxylic acids contg. norbornenyl groups 27063-48-5D, 2-Norbornene-5-carbonyl chloride, esters with hydroxy group-contg. polymers 39198-49-7D, 5-Methyl-2-norbornene-5-carbonyl chloride, esters with hydroxy group-contg. polymers 65188-72-9, Poly(2-norbornen-5-ylmethyl methacrylate) **181934-52-1**, Poly[2-(2-norbornen-5-ylcarbonyloxy)ethyl methacrylate] **181934-53-2**, Poly[2-(5-methyl-2-norbornen-5-ylcarbonyloxy)ethyl methacrylate] **181934-54-3**, Poly(2-norbornen-5-ylmethyl acrylate) (heat- and UV-curable coating compns. contg. metathesis polymn. catalysts and)
- IT 7440-21-3, Silicon, miscellaneous (wafers; mixts. of metathesis crosslinking catalysts and polymers contg. stressed cycloalkenyl groups as **photoresists** and coatings for)
- L35 ANSWER 10 OF 16 HCA COPYRIGHT 2002 ACS
- 112:236501 Curable polyene-polythiol resin compositions. Takiyama, Eiichiro; Ogura, Tateshi; Harigai, Noriaki (Showa Highpolymer Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01306424 A2 **19891211** Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-136554 19880602.
- AB The odorless title compns. with good heat resistance, useful for coatings and adhesives, comprise (a) polymers or oligomers (mol. wt. .gtoreq.1000) selected from compds. contg. .gtoreq.2 C:C bonds or .gtoreq.1 C.tplbond.C bond and (b) compds. prepd. by the reaction of alicyclic compds. having .gtoreq.2 unsatd. bond (.gtoreq.1 of which in the ring) and compds. having .gtoreq.2 SH, under SH excess condition. Thus, 132 g dicyclopentadiene was added dropwise to a mixt. of 490 g pentaerythritol tetramercaptopropionate and 0.2 g methyl-p-benzoquinone at .ltoreq.60.degree. and stirred 2 h at 80.degree. to give an odorless adduct (I). Sep., 200 g phenoxy resin (mol. wt. 25,000) was treated with 30 g isocyanatoethyl methacrylate in MEK to give an unsatd. polymer (II). A Cu foil was coated with a mixt. of I 50, II 450, and Darocure 1173 2 parts and irradiated by UV to form a coating with pencil hardness H, crosscut adhesion 100/100, and good solder heat resistance at 260.degree..
- IT **127455-59-8P** (prepn. of, odorless, heat-resistant, for coatings and adhesives)
- RN 127455-59-8 HCA
- CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with 2,2-bis[(3-mercapto-1-oxopropoxy)methyl]-1,3-propanediyl bis(3-mercaptopropanoate), 1,2-ethanediol, 1,3-isobenzofurandione, oxiranylmethyl 2-methyl-2-propenoate and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CRN 7575-23-7
CMF C17 H28 O8 S4



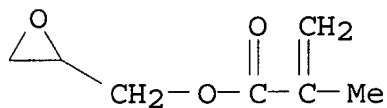
CM 2

CRN 107-21-1
CMF C2 H6 O2



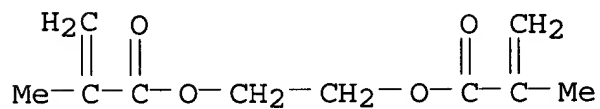
CM 3

CRN 106-91-2
CMF C7 H10 O3



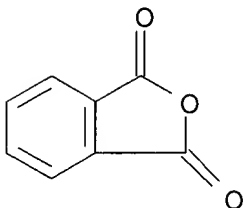
CM 4

CRN 97-90-5
CMF C10 H14 O4



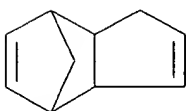
CM 5

CRN 85-44-9
CMF C8 H4 O3



CM 6

CRN 77-73-6
CMF C10 H12



IC ICM C08G075-00
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 42, 76
IT **Resists**
(curable polyene-polythiol copolymers for, heat-resistant)
IT Epoxy resins, uses and miscellaneous
(phenoxy, unsatd., solder **resist** inks contg.,
photocurable, odorless, heat-resistant)
IT Electric circuits
(printed, boards, **resist** inks for manuf. of, contg.
curable polyene-polythiol copolymers, heat-resistant)
IT 30674-80-7DP, Isocyanatoethyl methacrylate, reaction products with
phenoxy resins, polymers with polyene-polythiols 121602-09-3DP,
reaction products with phenoxy resin acrylates 127455-55-4P
127455-58-7P **127455-59-8P**
(prepn. of, odorless, heat-resistant, for coatings and adhesives)
IT 107-19-7D, Propargyl alcohol, isophorone diisocyanate adducts,
reaction products with phenoxy resins 4098-71-9D, Isophorone
diisocyanate, propargyl alc. adducts, reaction products with phenoxy
resins 127455-57-6
(solder **resist** inks contg., photocurable, odorless,
heat-resistant)

L35 ANSWER 11 OF 16 HCA COPYRIGHT 2002 ACS
110:202928 Forming high-build patterns with good heat resistance. Sato,
Kuniaki; Ishimaru, Toshiaki; Hayashi, Nobuyuki (Hitachi, Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 63183439 A2 **19880728**
Showa, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP

1987-15610 19870126.

AB The title process involves forming photosensitive layer from a compn. of photosensitive adducts of polyimide precursor of repeating unit $\text{-NHCOR1(CO2H)2CONHR2-}$ (R1 = tetravalent aliph. or alicyclic group; R2 = divalent arom., aliph., alicyclic, organosiloxane group) with an isocyanate R3R4C:CR5CO2R6NCO (R3 , R4 , R5 = H, Me; R6 = divalent hydrocarbon group), photopolymn. initiator, org. solvent, and optionally polymerizable unsatd. compd., followed by imagewise exposure of the photosensitive layer to active light, then developing with an aq. alkali. A copolymer of 5-(2,5-dioxotetrahydrofuryl)-3-methyl-2-cyclohexene-1,2-dicarboxylic acid anhydride and 4,4'-diaminodiphenyl ether in AcNMe2 was treated with 2-isocyanatoethyl methacrylate to give an adduct which was then mixed with tetraethylene glycol diacrylate, Ph2CO2 , and 4,4'-bis(diethylalmino)benzophenone, coated on a Cu-clad laminate, dried at 80.degree., UV-irradiated via a pattern **mask**, developed in 2% aq. Na2CO3 , rinsed, and post-cured at 250.degree. for 1 h to give a pattern with 10% wt.-loss temp. 415.degree..

IT 120516-00-9P

(photoresists, heat-resistant, manuf. of)

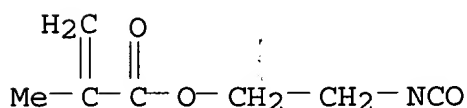
RN 120516-00-9 HCA

CN 2-Propenoic acid, 2-methyl-, 2-isocyanatoethyl ester, polymer with 3a,4,4a,7a,8,8a-hexahydro-4,8-etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 4,4'-oxybis[benzenamine] and oxybis(2,1-ethanediyl)oxy-2,1-ethanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 30674-80-7

CMF C7 H9 N O3

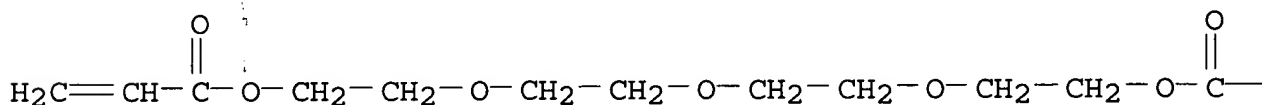


CM 2

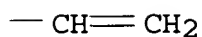
CRN 17831-71-9

CMF C14 H22 O7

PAGE 1-A



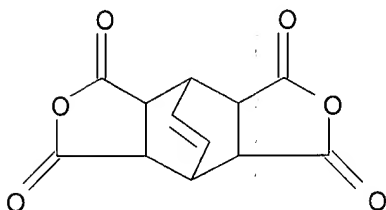
PAGE 1-B



CM 3

CRN 1719-83-1

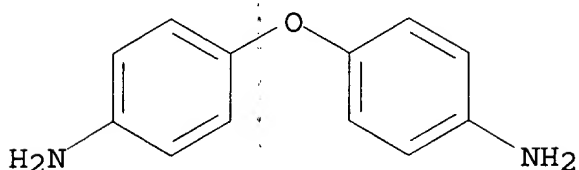
CMF C12 H8 O6



CM 4

CRN 101-80-4

CMF C12 H12 N2 O



- IC ICM G03C001-68
ICS C08G018-81; G03C001-68; G03F007-10
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST polyimide methacrylate **photoresist** heat resistant
- IT Heat-resistant materials
(methacrylate group-contg. polyimide **photoresists**)
- IT Polyimides, preparation
(acrylate group-contg., manuf. of, for heat-resistant **photoresists**)
- IT **Resists**
(photo-, methacrylate group-contg. polyimides, heat-resistant)
- IT 75-59-2, Tetramethylammonium hydroxide 102-71-6, Triethanolamine, uses and miscellaneous 497-19-8, Sodium carbonate, uses and miscellaneous
(developers, in pattern forming with methacrylate group-contg.)

polyimide photoresists)

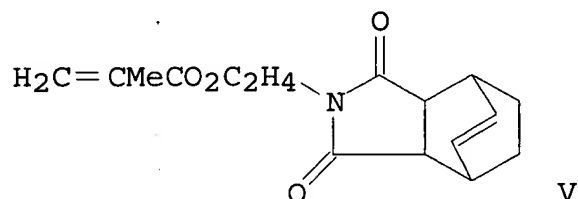
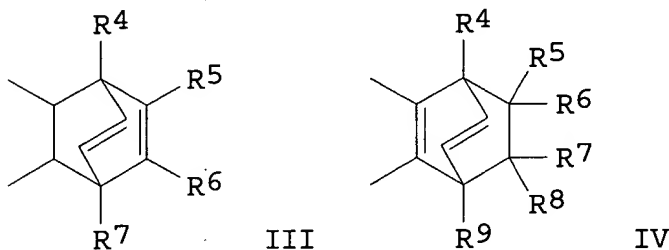
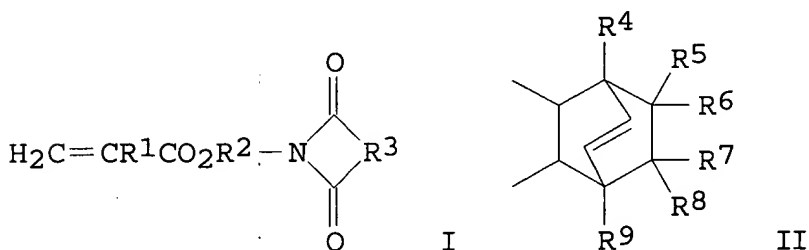
IT 120515-98-2P 120515-99-3P 120516-00-9P 120516-01-0P
120516-02-1P

(photoresists, heat-resistant, manuf. of)

L35 ANSWER 12 OF 16 HCA COPYRIGHT 2002 ACS

110:31403 Electrostatographic toner containing polymer binder. Kumagai, Jugo; Moribe, Isamu; Higashida, Osamu (Hitachi Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63169664 A2 19880713 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-1182 19870107.

GI



AB Polymer binders contg. vinylic monomer unit(s) with imido groups (I) are contained in the title toner (R1 = H, Me; R2 = C1-6 alkylene, divalent org. group with cycloaliph. or arom. group; R3 = II, III, IV; R4-9 = H, C1-3 alkyl, halo, OSiR10R11R12, NR10R11, NO2, SO3H, N3; R10-12 = H, C1-5 alkyl). The toner **resists** adhering to soft PVC. Thus, a mixt. of V 44, styrene 29, Bu maleate 2, Bu fumarate 25, and Bz2O2 30 parts was suspension-polymd. in aq. medium contg. partially saponif. poly(vinyl acetate), and 90 parts polymer

was mixed with carbon black 5, black dye 3, and polypropylene 2 parts to produce a toner. The use of this toner in a laser printer system with Fe carrier gave copies with d. 1.3 and fog d. 0.07, which was hardly changed after 100,000 copying.

IT 118257-94-6

(binder, electrostatog. toner contg., resistance to plasticizers by)

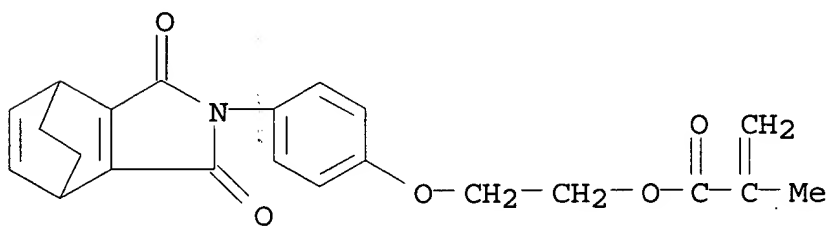
RN 118257-94-6 HCA

CN 2-Butenedioic acid (2E)-, dibutyl ester, polymer with diethenylbenzene, 2-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)ethyl 2-methyl-2-propenoate, ethenylbenzene and 2-[4-(1,3,4,7-tetrahydro-1,3-dioxo-4,7-ethano-2H-isoindol-2-yl)phenoxy]ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 118257-93-5

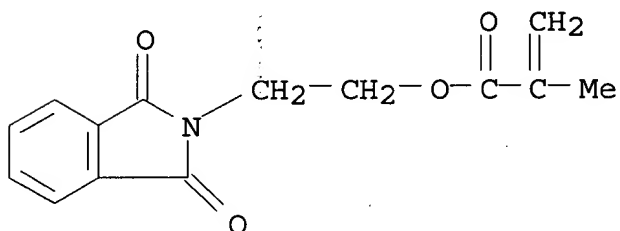
CMF C22 H21 N O5



CM 2

CRN 18791-05-4

CMF C14 H13 N O4

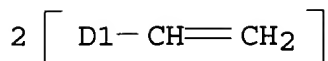
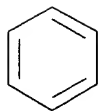


CM 3

CRN 1321-74-0

CMF C10 H10

CCI IDS

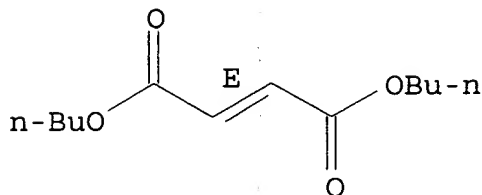


CM 4

CRN 105-75-9

CMF C12 H20 O4

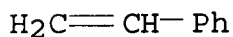
Double bond geometry as shown.



CM 5

CRN 100-42-5

CMF C8 H8



IC ICM G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38

IT 118256-20-5 118256-21-6 118257-90-2 118257-92-4
118257-94-6 118257-95-7

(binder, electrostatog. toner contg., resistance to plasticizers
by)

L35 ANSWER 13 OF 16 HCA COPYRIGHT 2002 ACS

110:31402 Electrostatographic toner containing polymer binder. Kumagai,
Jugo; Moribe, Isamu; Higashida, Osamu (Hitachi Chemical Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 63169663 A2 19880713
Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1987-1181 19870107.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Polymer binders contg. vinyl monomer unit(s) with imido groups (I) are contained in the title toner (R1 = H, Me; R2 = C1-6 alkylene, divalent org. group with cycloaliph. or arom. group; R3 = II-X; R4-11 = H, C1-3 alkyl, NO2, SO3H, N3; R3 has .gtoreq.1 NO2, SO3H, N3; R12 = CH2, CMe2, CH2CH2, CH2CHMe). The toner **resists** adhering to soft PVC. Thus, a mixt. of XI 20, XII 25, styrene 50, Bu fumarate 5, and Bz2O2 27 parts was suspension-polymd. in aq. medium contg. partially sapond. poly(vinyl acetate), and 90 parts polymer was mixed with carbon black 5, black dye 3, and polypropylene 2 parts to produce a toner. The use of this toner in a laser printer system with Fe carrier gave copies with d. 1.3 and fog d. 0.07, which was hardly changed after 100,000 copying.

IT 118257-85-5 118257-86-6 118257-87-7
(binder, electrostatog. toner contg., resistance to plasticizers by)

RN 118257-85-5 HCA

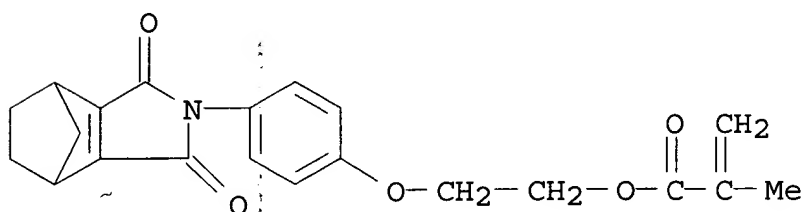
CN 2-Butenedioic acid (2E)-, dibutyl ester, polymer with 2-[4-[4(or 5)-azido-1,3,4,5,6,7-hexahydro-1,3-dioxo-4,7-methano-2H-isoindol-2-yl]phenoxy]ethyl 2-methyl-2-propenoate, butyl 2-methyl-2-propenoate, diethenylbenzene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 118257-84-4

CMF C21 H20 N4 O5

CCI IDS



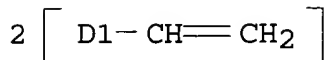
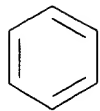
D1-N3

CM 2

CRN 1321-74-0

CMF C10 H10

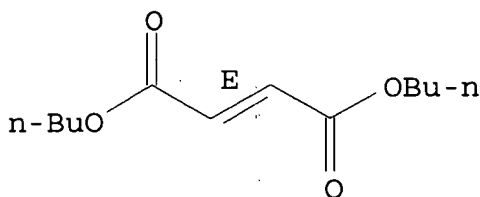
CCI IDS



CM 3

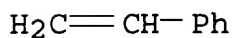
CRN 105-75-9
CMF C12 H20 O4

Double bond geometry as shown.



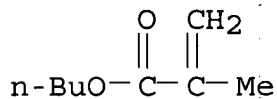
CM 4

CRN 100-42-5
CMF C8 H8



CM 5

CRN 97-88-1
CMF C8 H14 O2



RN 118257-86-6 HCA
CN 2-Butenedioic acid (2E)-, dibutyl ester, polymer with 6-[4(or
5)-azido-1,3,4,5,6,7-hexahydro-1,3-dioxo-4,7-ethano-2H-isoindol-2-

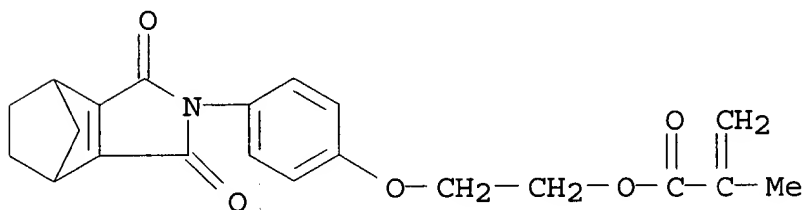
yl]hexyl 2-propenoate, 2-[4-[4(or 5)-azido-1,3,4,5,6,7-hexahydro-1,3-dioxo-4,7-ethano-2H-isoindol-2-yl]phenoxy]ethyl 2-methyl-2-propenoate, diethenylbenzene, 3-[4-[1,3-dihydro-1,3-dioxo-5(or 6)-sulfo-2H-benz[f]isoindol-2-yl]phenoxy]propyl 2-methyl-2-propenoate, 2-[1,3-dihydro-4(or 5)-nitro-1,3-dioxo-2H-isoindol-2-yl]ethyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 118257-84-4

CMF C21 H20 N4 O5

CCI IDS



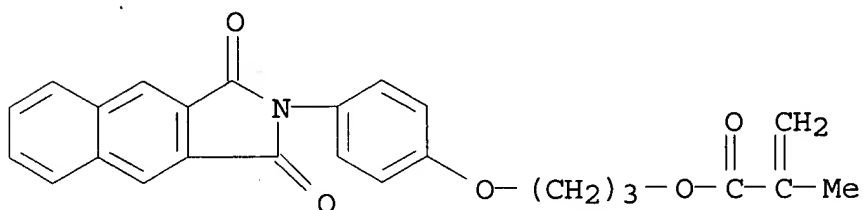
D1-N3

CM 2

CRN 118257-80-0

CMF C25 H21 N O8 S

CCI IDS



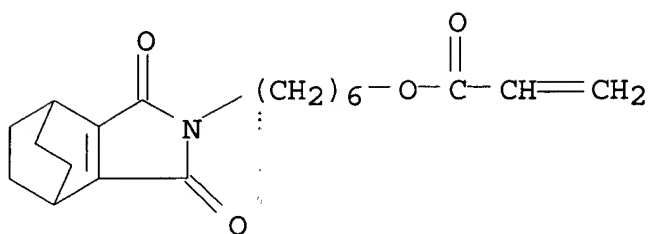
D1-SO₃H

CM 3

CRN 118257-78-6

CMF C19 H24 N4 O4

CCI IDS

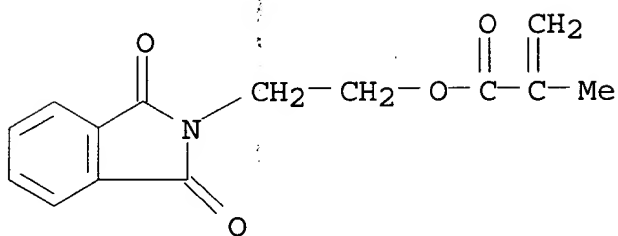
D1-N₃

CM 4

CRN 118257-77-5

CMF C14 H12 N2 O6

CCI IDS

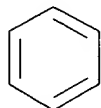
D1-NO₂

CM 5

CRN 1321-74-0

CMF C10 H10

CCI IDS

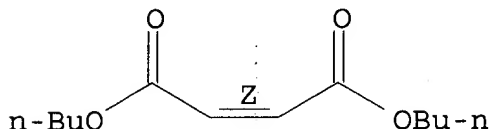
2 [D1-CH=CH₂]

CM 6

CRN 105-76-0

CMF C12 H20 O4

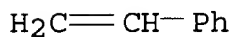
Double bond geometry as shown.



CM 7

CRN 100-42-5

CMF C8 H8



RN 118257-87-7 HCA

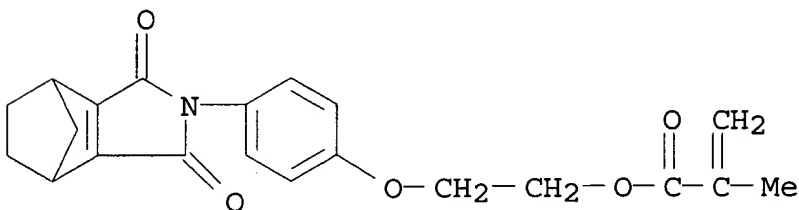
CN 2-Butenedioic acid (2E)-, dibutyl ester, polymer with 2-[4-[4(or 5)-azido-1,3-dihydro-1,3-dioxo-4,7-methano-2H-isoindol-2-yl]phenoxy]ethyl 2-methyl-2-propenoate, 2-(diethylamino)ethyl 2-methyl-2-propenoate, 2-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)ethyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 118257-84-4

CMF C21 H20 N4 O5

CCI IDS

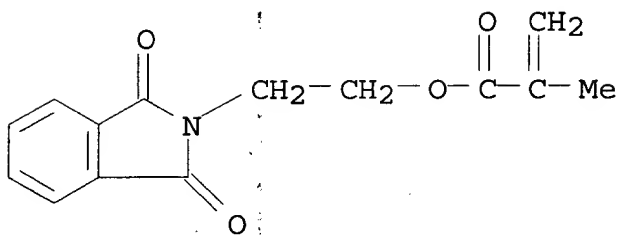


D1-N3

CM 2

CRN 18791-05-4

CMF C14 H13 N O4

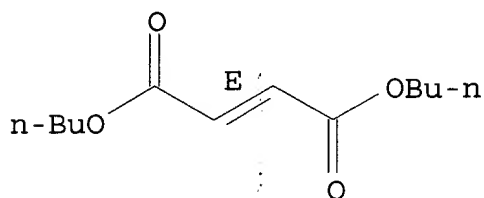


CM 3

CRN 105-75-9

CMF C12 H20 O4

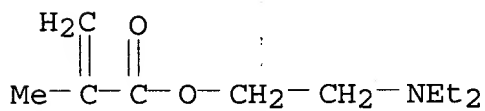
Double bond geometry as shown.



CM 4

CRN 105-16-8

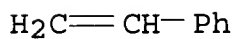
CMF C10 H19 N O2



CM 5

CRN 100-42-5

CMF C8 H8



IC ICM G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

IT 118257-79-7 118257-81-1 118257-83-3 118257-85-5
118257-86-6 118257-87-7
(binder, electrostatog. toner contg., resistance to plasticizers by)

L35 ANSWER 14 OF 16 HCA COPYRIGHT 2002 ACS

109:191433 Polymerizable (meth)allylnorbornene dicarboximide-(meth)acrylate ester compositions. Banks, Christopher Paul; Irving, Edward; Renner, Alfred; Smith, Terence James (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 269568 A2 19880601, 15 pp.
DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI, NL, SE. (German).
CODEN: EPXXDW. APPLICATION: EP 1987-810663 19871116. PRIORITY: GB 1986-28003 19861122.

AB Mixts. of (meth)acrylate esters and (meth)allyl-5-norbornene-2,3-dicarboximide derivs. can be photopolymd. to polymers useful in fiber-reinforced composites and imaging, which can be thermally cured. A mixt. of N,N'-hexamethylenebis(allyl-5-norbornene-2,3-dicarboximide) 35, N,-diallyl-5-norbornene-2,3-dicarboximide 5, tetramethylene methacrylate 8, allyl methacrylate 2, PhCOC(OMe)2Ph 1, and allyl-N-(benzenesulfonyloxy)-5-norbornene-2,3-dicarboximide 0.2 part was exposed as a 20-.mu.m film to an 80-W/cm Hg lamp at a distance of 20 cm for 30 s and then heated at 250.degree. for 2 h to give a hard film with glass temp. 285-290.degree..

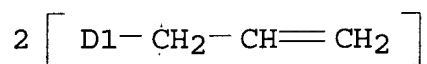
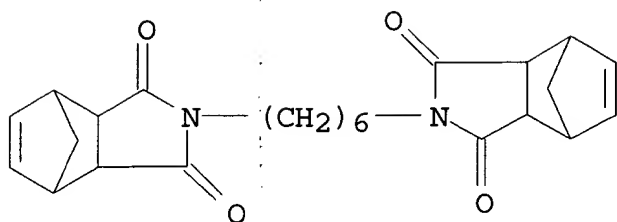
IT 117181-84-7P 117181-85-8P 117181-86-9P
117181-87-0P 117181-88-1P 117181-90-5P
117181-91-6P 117181-92-7P 117181-93-8P
117181-94-9P 117181-95-0P 117181-96-1P
117181-97-2P 117248-17-6P
(manuf. of, by photochem. polymn.)

RN 117181-84-7 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyl-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2'-(1,6-hexanediyl)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione], 2-propenyl 2-methyl-2-propenoate and 3a,4,7,7a-tetrahydro-2,?-di-2-propenyl-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

CRN 91865-52-0
CMF C30 H36 N2 O4
CCI IDS

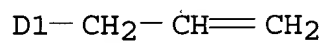
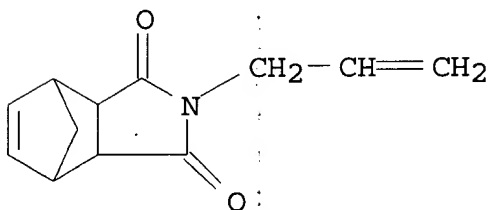


CM 2

CRN 91865-47-3

CMF C15 H17 N O2

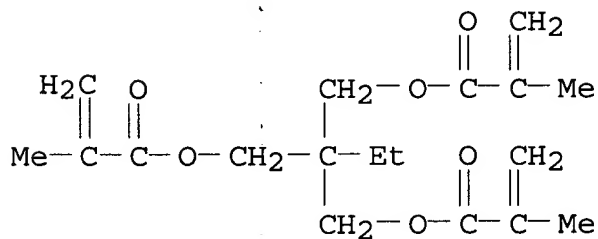
CCI IDS



CM 3

CRN 3290-92-4

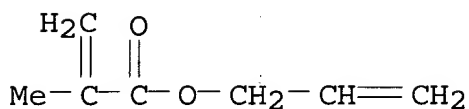
CMF C18 H26 O6



CM 4

CRN 96-05-9

CMF C7 H10 O2



RN 117181-85-8 HCA

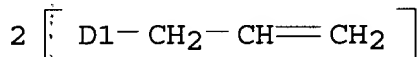
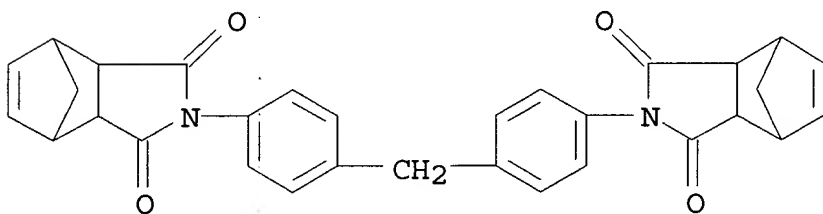
CN 2-Propenoic acid, 2-methyl-, 2-ethyl-2-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2'-(1,6-hexanediyl)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione], 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] and 3a,4,7,7a-tetrahydro-2,?-di-2-propenyl-4,7-methano-1H-isoindole-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

CCI IDS

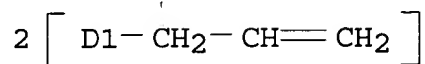
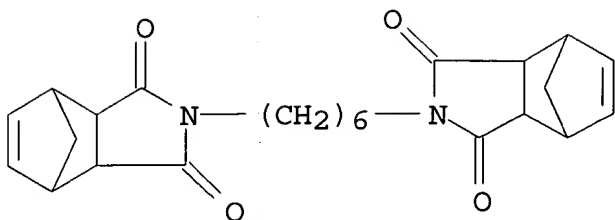


CM 2

CRN 91865-52-0

CMF C30 H36 N2 O4

CCI IDS

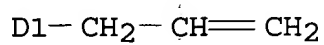
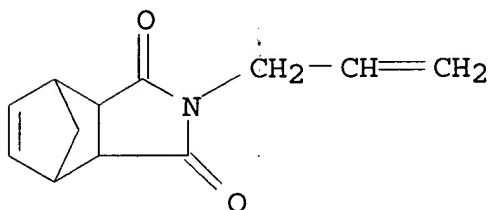


CM 3

CRN 91865-47-3

CMF C15 H17 N O2

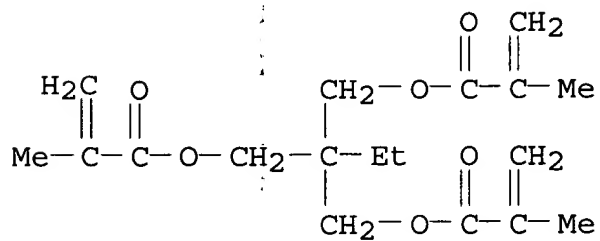
CCI IDS



CM 4

CRN 3290-92-4

CMF C18 H26 O6



RN 117181-86-9 HCA

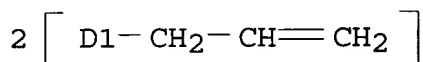
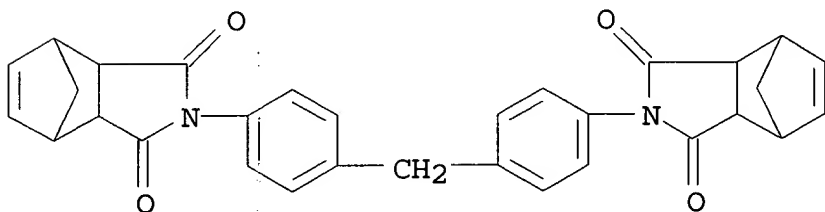
CN 2-Propenoic acid, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-trityl)tri-2,1-ethanediyl ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

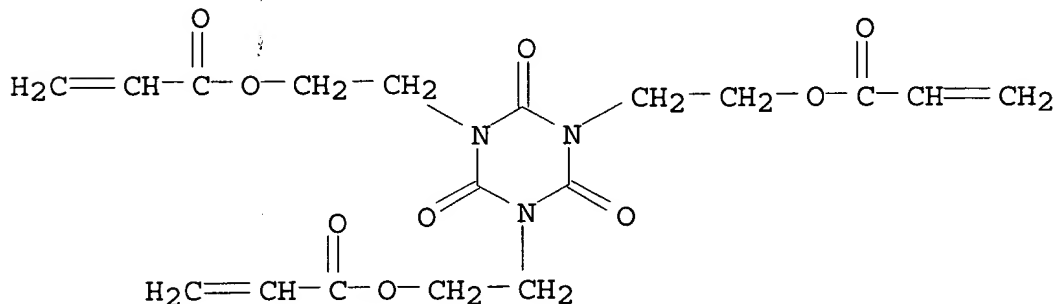
CCI IDS



CM 2

CRN 40220-08-4

CMF C18 H21 N3 O9

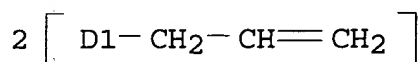
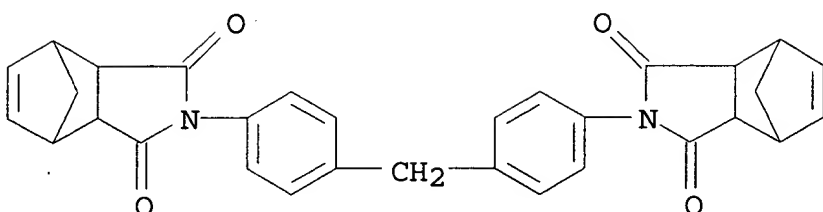


RN 117181-87-0 HCA

CN 2-Propenoic acid, 2-[[[3-hydroxy-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

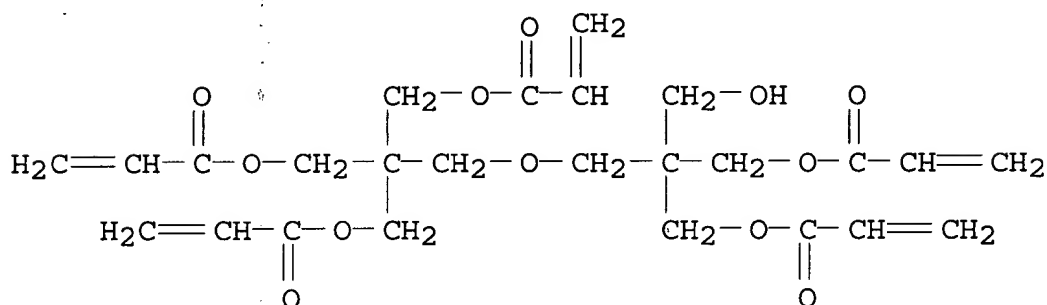
CM 1

CRN 91865-54-2
 CMF C37 H34 N2 O4
 CCI IDS



CM 2

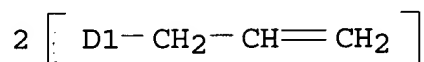
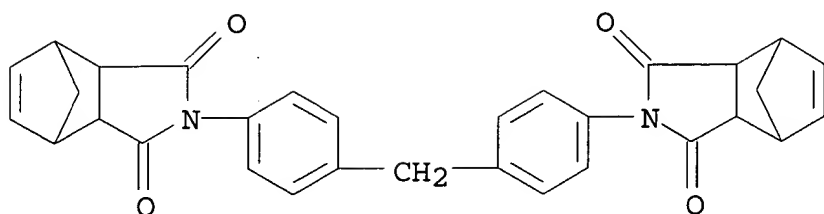
CRN 60506-81-2
 CMF C25 H32 O12



RN 117181-88-1 HCA
 CN 2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester, polymer with
 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-
 4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

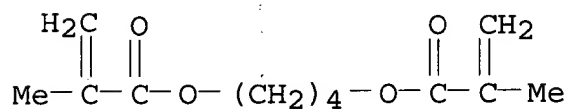
CRN 91865-54-2
 CMF C37 H34 N2 O4
 CCI IDS



CM 2

CRN 2082-81-7

CMF C12 H18 O4



RN 117181-90-5 HCA

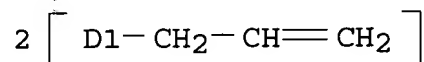
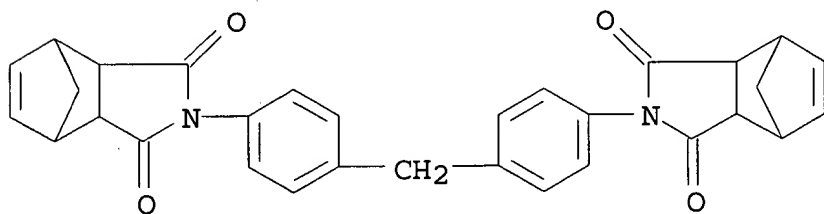
CN 2-Propenoic acid, 1,4-butanediyl ester, polymer with
 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-
 4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

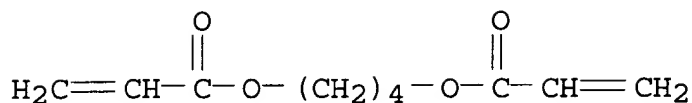
CCI IDS



CM 2

CRN 1070-70-8

CMF C10 H14 O4



RN 117181-91-6 HCA

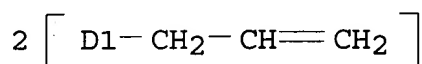
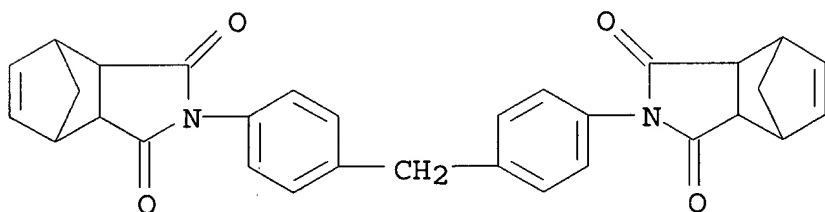
CN 2-Propenoic acid, 2,2-dimethyl-1,3-propanediyl ester, polymer with
 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-
 4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

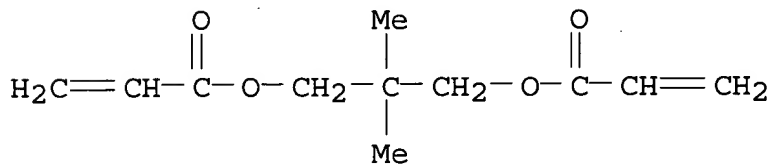
CCI IDS



CM 2

CRN 2223-82-7

CMF C11 H16 O4



RN 117181-92-7 HCA

CN 2-Propenoic acid, 1,6-hexanediyl ester, polymer with
 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-

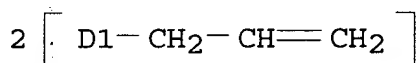
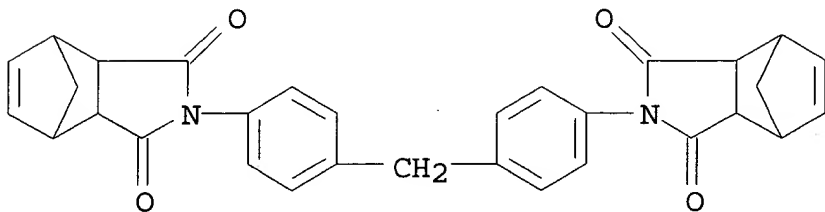
4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

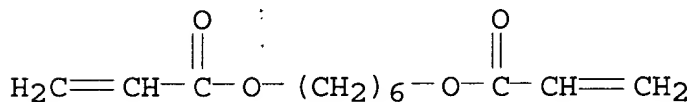
CCI IDS



CM 2

CRN 13048-33-4

CMF C12 H18 O4



RN 117181-93-8 HCA

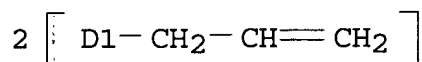
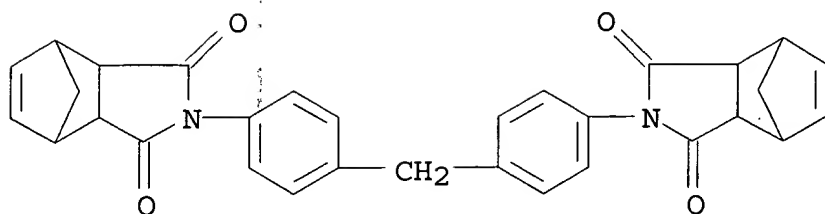
CN 2-Propenoic acid, 2-methyl-, 1,6-hexanediyl ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

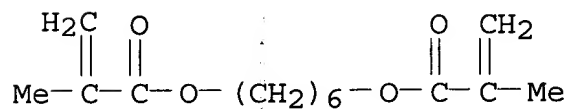
CCI IDS



CM 2

CRN 6606-59-3

CMF C14 H22 O4



RN 117181-94-9 HCA

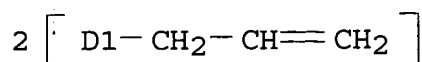
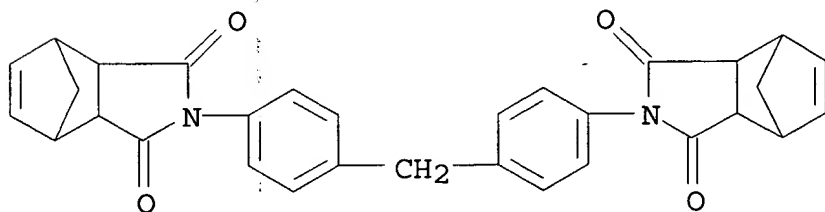
CN 2-Propenoic acid, (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

CCI IDS

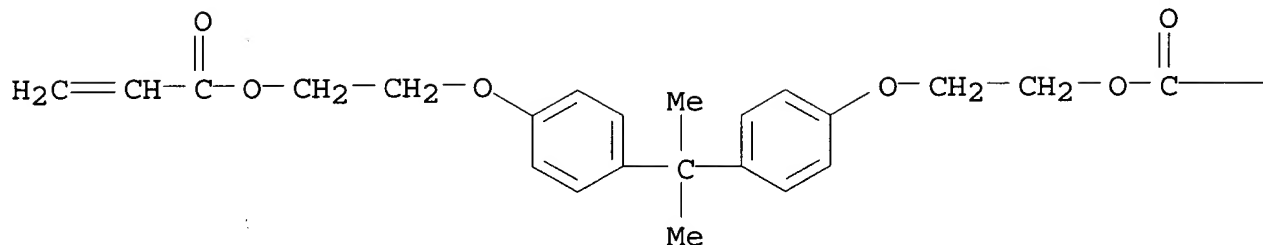


CM 2

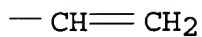
CRN 24447-78-7

CMF C25 H28 O6

PAGE 1-A



PAGE 1-B



RN 117181-95-0 HCA

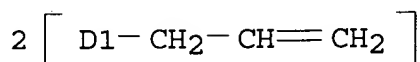
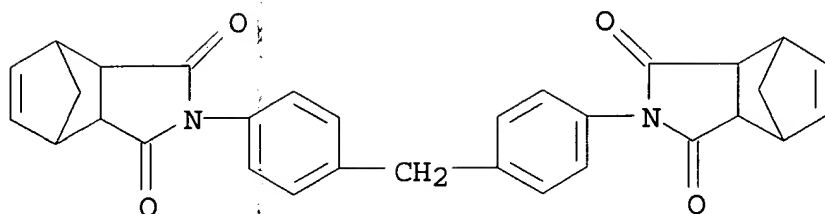
CN 2-Propenoic acid, 2-methyl-, (1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl) ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

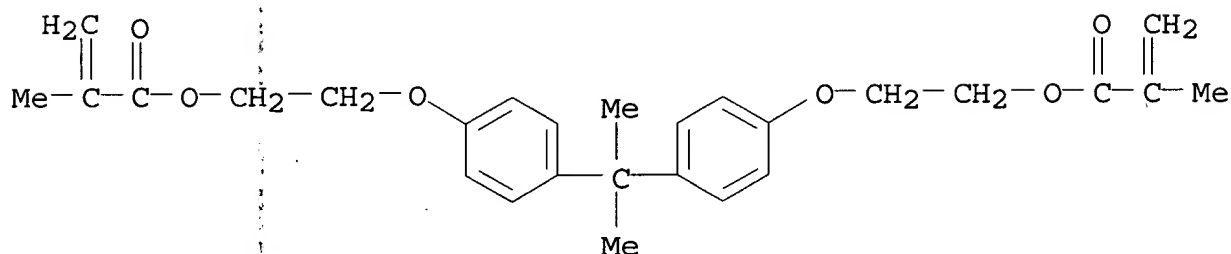
CCI IDS



CM 2

CRN 24448-20-2

CMF C27 H32 O6



RN 117181-96-1 HCA

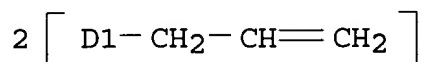
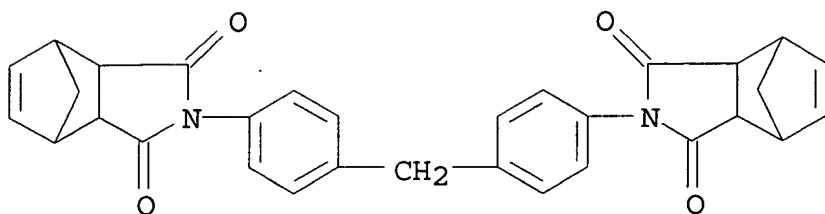
2-Propenoic acid, (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

CCI IDS

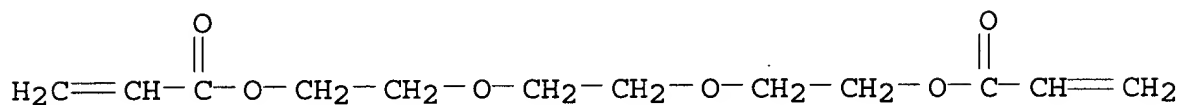


CM 2

CRN 42978-66-5

CMF C15 H24 O6

CCI IDS



3 (D1-Me)

RN 117181-97-2 HCA

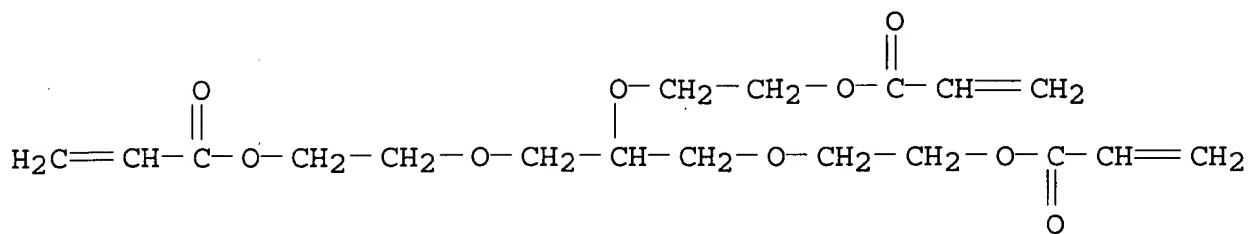
CN 2-Propenoic acid, 1,2,3-propanetriyltris[oxy(methyl-2,1-ethanediyl)]
 ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-
 tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI)
 (CA INDEX NAME)

CM 1

CRN 116743-74-9

CMF C21 H32 O9

CCI IDS



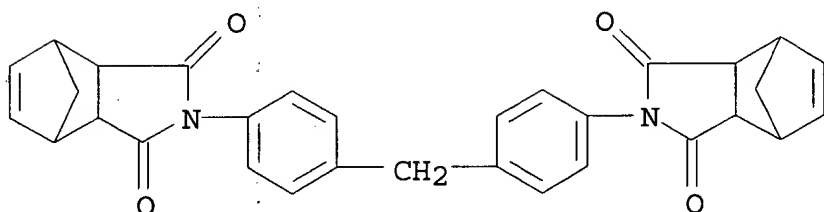
3 (D1-Me)

CM 2

CRN 91865-54-2

CMF C37 H34 N2 O4

CCI IDS

2 [D1-CH₂-CH=CH₂]

RN 117248-17-6 HCA

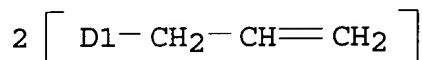
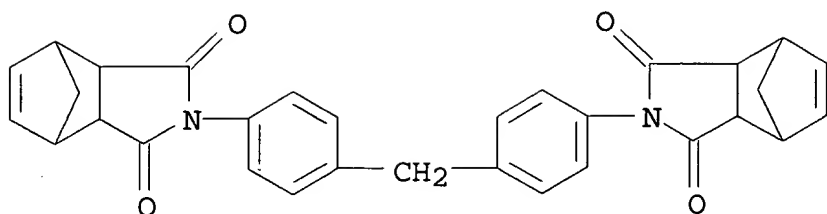
CN 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2,2'-(methylenedi-4,1-phenylene)bis[3a,4,7,7a-tetrahydro(2-propenyl)-4,7-methano-1H-isoindole-1,3(2H)-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 91865-54-2

CMF C37 H34 N2 O4

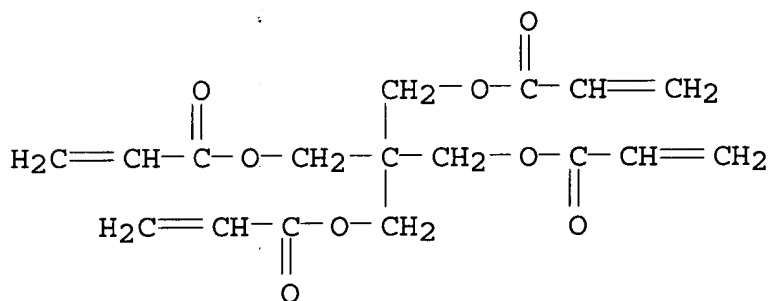
CCI IDS



CM 2

CRN 4986-89-4

CMF C17 H20 O8



IC ICM C08F226-06

ICS C08F222-40; C08J005-24

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 27, 74

IT **Resists**

(photo-, allylnorbornenedicarboximide deriv. copolymers, manuf. of)

IT 117181-84-7P 117181-85-8P 117181-86-9P

117181-87-0P 117181-88-1P 117181-89-2P

117181-90-5P 117181-91-6P 117181-92-7P

117181-93-8P 117181-94-9P 117181-95-0P

117181-96-1P 117181-97-2P 117182-91-9P

117248-17-6P

(manuf. of, by photochem. polymn.)

L35 ANSWER 15 OF 16 HCA COPYRIGHT 2002 ACS

105:154813 Liquid photopolymers curable to fire-retardant,
 hydrolysis-resistant compositions. Kang, Uan G.; Bush, Richard W.;
 Ketley, Arthur D.; Ferrin, Clifford A., Jr. (Grace, W. R., and Co.,

USA). U.S. US 4591522 A 19860527, 8 pp. (English).

CODEN: USXXAM. APPLICATION: US 1985-688856 19850104.

AB Liq., screen-printable, photocurable compns., useful for fire- and hydrolysis-resistant coatings and solder **masks** for elec. circuit boards contain (1) a nonstoichiometric mixt. of an aliph. unsatn.-contg. chlorendate ester and ester group-free polythiol, (2) either the chlorendate ester or the polythiol in an amt. up to that sufficient to react with the excess of the other in (1), and (3) >1 photoinitiator, and optionally, (4) a liq. (meth)acrylate monomer or oligomer. Thus, reaction of 185.5 g chlorendic anhydride with 77 g allyl chloride and 91 g methallyl chloride 2 h at 70.degree. in 310 mL 11.1% aq. NaOH in the presence of 0.2 g CuCl gave 94% product contg. diallyl chlorendate (I) 15, allylmethallyl chlorendate (II) 55, and dimethallyl chlorendate (III) 30%. Keeping 625 g tris(2-mercaptoethyl) isocyanurate with 350 g I-II-III mixt. in the presence of 0.96 g benzopinacol for 60 min at 90.degree., and adding I-II-III mixt. 1050, 2,2-dimethoxy-2-phenylacetophenone 72, benzophenone 31, Al₂O₃ 400, and pyrogenic silica 45 g at 60.degree. gave a compn. that exhibited good screen-printability and photocurability and provided a hydrolysis and solder-resistant, 10-mil coating with O index 29.

IT 104570-44-7

(coatings, fire-, hydrolysis- and solder-resistant, photocurable, for elec. circuit boards)

RN 104570-44-7 HCA

CN Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1,4,5,6,7,7-hexachloro-, di-2-propenyl ester, polymer with .alpha.-hydro-.omega.-(2-hydroxy-3-mercaptopropoxy)poly[oxy(methyl-1,2-ethanediyl)] .alpha.,.alpha.',.alpha.''-ether with 2-(hydroxymethyl)-2-methyl-1,3-propanediol (3:1) and .alpha.,.alpha.'-[(1-methylethylidene)di-4,1-phenylene]bis[.omega.-[(2-methyl-1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

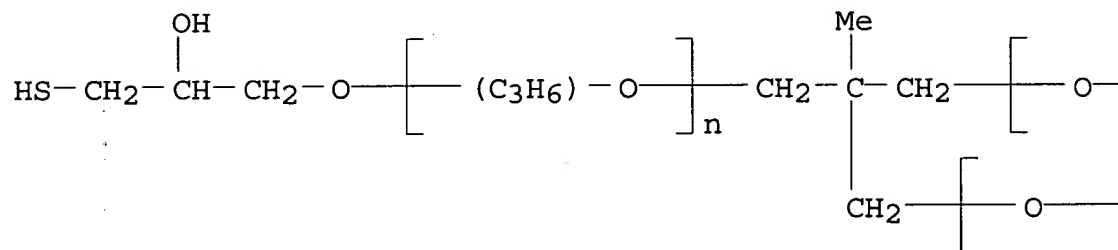
CM 1

CRN 101359-87-9

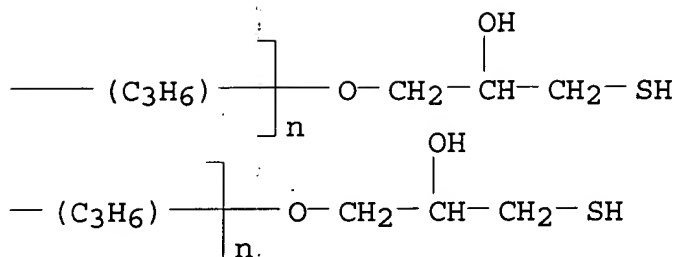
CMF (C₃ H₆ O)_n (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₄ H₃₀ O₆ S₃

CCI IDS, PMS

PAGE 1-A



PAGE 1-B



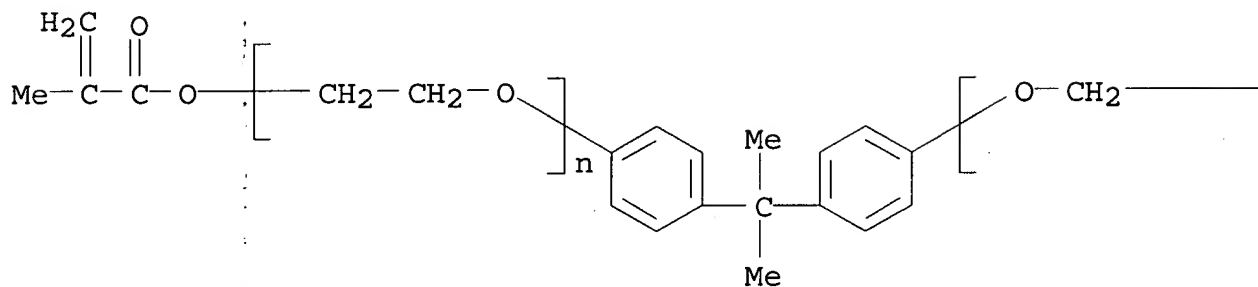
CM 2

CRN 41637-38-1

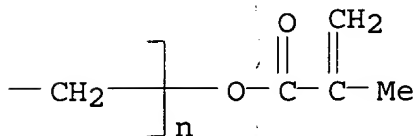
CMF (C2 H4 O)_n (C2 H4 O)_n C23 H24 O4

CCI PMS

PAGE 1-A



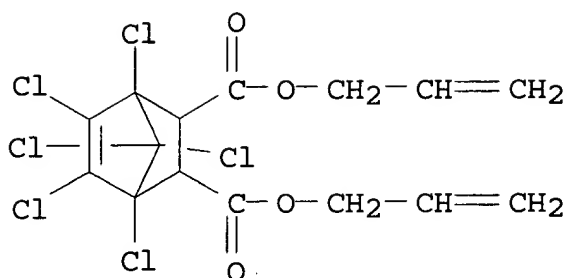
PAGE 1-B



CM 3

CRN 3232-62-0

CMF C15 H12 Cl6 O4



- IC ICM B05D003-06
 NCL 428419000
 CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 76
 ST fire resistant solder **mask**; hydrolysis resistant solder **mask**; elec circuit board solder **mask**; unsatd chlorendate polythiol copolymer coating; photocurable solder **mask**; screen printable solder **mask**
 IT Fire-resistant materials
 (polythiol-unsatd. chlorendate ester copolymers, for photocurable solder **masks** for elec. circuits boards)
 IT Electric circuits
 (printed, boards, solder **masks** for, fire- and hydrolysis-resistant photocurable, unsatd. chlorendate ester-polythiol copolymers as)
 IT 104400-86-4 104559-79-7 104559-81-1 104559-82-2
 104570-44-7 104579-93-3
 (coatings, fire-, hydrolysis- and solder-resistant, photocurable, for elec. circuit boards)
- L35 ANSWER 16 OF 16 HCA COPYRIGHT 2002 ACS
 81:44138 Photo-hardening photosensitive materials. Nishikubo, Tadatomi; Ugai, Shinji; Ichi, Jotaro; Kishida, Masahiko (Nippon Oil Seal Industry Co., Ltd.). Japan. Kokai JP 49002601 19740110 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1972-40377 19720424.
- AB Photosensitive materials which harden upon exposure to light contain (1) products from the reaction between dibasic acid anhydrides and addn. products of epoxy resins and photopolymerizable .alpha.,.beta.-unsatd. carboxylic acids; (2) photopolymerizable monomers; and (3) initiators for photopolymn. These materials can be used as paints or printing inks with the addn. of pigments; and because of their good adhesion properties, they are useful in prepg. relief images. Thus, Dow ER-337 epoxy resin 130 g and acrylic acid 36 g were heated for 8 hr at 90.degree. in triethylene glycol diacrylate 260 g contg. Me(Et)3NI 2 g and hydroquinone monomethyl ether 6.3 g. After cooling to 50.degree., the product was treated with HET, acid 186 g at 80.degree. for 3 hr, benzoin Et ether 0.2 part was added, and the resultant soln. coated on a steel plate. On exposure to a 500-W Hg-lamp at 30 cm hardening took place in 0.5

sec. The above soln. was coated (2 mm) on a galvanized Fe sheet, covered with a polyester film, and exposed through a negative for 3 min. On ruling off the polyester film and developing with MeOH for 2 min a relief image was obtained.

IT 53363-34-1

(photopolymerizable compns. contg., for relief printing plates)

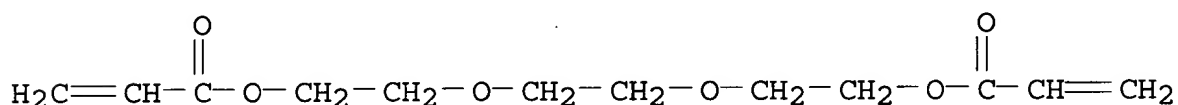
RN 53363-34-1 HCA

CN Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid, 1,4,5,6,7,7-hexachloro-, polymer with 1,2-ethanediylbis(oxy-2,1-ethanediyl) di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 1680-21-3

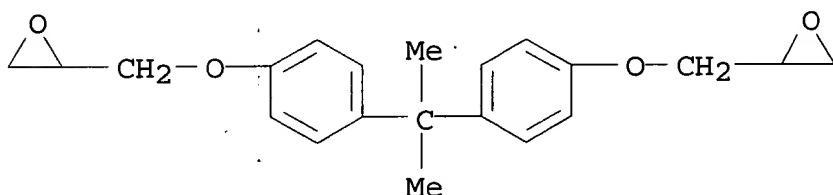
CMF C12 H18 O6



CM 2

CRN 1675-54-3

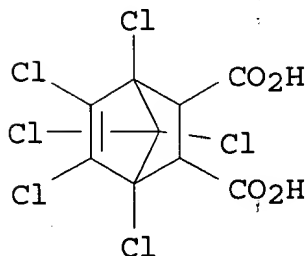
CMF C21 H24 O4



CM 3

CRN 115-28-6

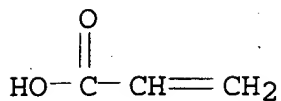
CMF C9 H4 Cl6 O4



CM 4

CRN 79-10-7

CMF C3 H4 O2



NCL 116A415

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic Processes)

Section cross-reference(s): 42

ST epoxy resin photopolymer compn; **photoresist** epoxy resin;
resist photo epoxy resin; relief image epoxy resin

IT 53363-34-1

(photopolymerizable compns. contg., for relief printing plates)